THE UNIVERSITY OF UTAH

INSTITUTIONAL BIOSAFETY COMMITTEE
MEETING MINUTES

May 21, 2026
Meeting was convened at 11:00 AM
Hybrid Meeting

Voting Members Present:
☒Cecilia Gerstner (IBC Chair)
☐Jeff Clifford (IBC Vice Chair)
☒Debbie Eckert (BSO)
☒Chris Hunter (ABSO)
☒Isaac Martineau (BS Specialist)
☒Ricky Bell (IBC Member)
☒Neil Bowles (IBC Member)
☒Jessica Brown (IBC Member)
☒Allison Carey (IBC Member)
☒Scott Cho (IBC Member)
☒David Gillespie (IBC Member)
☐Talia Karasov (Plant Expert)
☐John Kriesel (HGT Expert)
☒Karla McHale (IBC Member)
☒Bart Mickelsen (IBC Member)
☒Kate Modzelewska (IBC Member)
☒Andy Phillips (IBC Member)
☒Robert Sperling (IBC Member)
☒Alton Swennes (Animal Expert)
☒David Thomas (IBC Member)
☒Michael Voight (IBC Member)
☐Tom Wachter (IBC Member)
☐Zemin Zhou (IBC Member)
☒Wendy Zhu (IBC Member)

Quorum was present; 7 are required to conduct business.

Conflict of Interest Declaration

Allison for protocol #29-24.10
Debbie for protocol #62-24.01.
Ricky for protocol #19-25.03

Review of April 16, 2026 Minutes

Motion: **Approve**
Vote for Motion: 16 in favor of the motion
3 Abstain

Old Business

#26-26 Erik Jorgensen. Synaptic vesicle recycling in rat hippocampal synapses; Genome engineering in Nematode C. elegans.

The Jorgensen laboratory is identifying the proteins that function at the synapse to release and recycle synaptic vesicles. To identify these molecules, they have undertaken a genetic analysis of neurotransmission in the nematode Caenorhabditis elegans. C. elegans is particularly advantageous for such studies for several reasons: First, mutants with defective synapses are viable and can be studied as adults. Second, they can select for mutants with defective neurotransmission using drug resistance screens. Third, they can characterize mutant synapses at the ultrastructural and electrophysiological levels. So far, the lab has identified over 30 genes that are required for normal synaptic transmission. Some of these genes are required for synaptic vesicle exocytosis and some are required for synaptic vesicle endocytosis. The precise function of these proteins is being determined using electrophysiological, biochemical, fluorescence and electron microscopic techniques.

PI responded to post-review memo. Response was reviewed by primary reviewer, BSO, and ABSO. Approval granted 5/18/26.

#22-26 Niladri Sinha. Molecular mechanisms of ZAK- and GCN2-mediated signaling in response to ribotoxic stress; Molecular mechanisms of translational stress responses to cytosolic proteotoxicity; Translational control mechanisms underlying T cell activation and exhaustion.

They study key aspects of protein synthesis and translational control in healthy and diseased states. Their research explores the multifaceted roles of ribosomes as a central sensor and effector of cellular stress response. Specifically, they aim to elucidate how ribosomes detect and respond to ribotoxic stress, and identify and characterize ribosome-mediated quality control and signaling pathways that regulate cellular homeostasis and cell fate decisions in response to translational stress.

Outstanding issues to be addressed which were communicated to PI through email.

- In the Recombinant or Synthetic Nucleic Acid Molecules Survey, change Q5) to "No"
- As personnel are hired, add them to both SAM and SciShield registrations.

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/17/26.

#28-26 Mei Yee Koh. Targeting iron metabolism in kidney cancer; Generation of HAF/SART1 Conditional Knockout Mice.

The Koh lab uses cell biology and molecular biology techniques to identify new treatment strategies for the treatment of cancer. Specifically, the lab focuses on the impact of low oxygen within the tumor micro-environment in promoting tumor progression and resistance to therapy.

Outstanding issues which were communicated to PI through post-review memo.

- **In SciShield:**
  - Edit the project form for *Generation of HAF/SART1 Conditional Knockout Mice* to verify the IACUC number is provided is current. 1756 has been identified as applicable to their lab.
- **Biosafety Manual:**
  - In Section B. Training and Hepatitis B Vaccination Program, replace Animal Biosafety Level 2 Training with Viral Vector Training, which is repeated every 3 years.
  - In Section C. Agents Used in Lab,
    - Murine Leukemia Virus, PI needs to add the following medications to the Prophylaxis and Treatment Options section:
      - Dolutegravir 50 mg taken once a day for 7 days AND Tenofovir disoproxil fumarate 300 mg taken once a day for 7 days
        Important Notes:
        - These recommendations are for replication-deficient vectors.
        - Replication-competent vectors would require 28 days of treatment as with HIV.
    - AAV8, PI needs to add theoretical risk of insertional mutagenesis in the Signs and Symptoms section.
  - Add a note to Section F. Laboratory-Specific Standard Operating Procedures stating that all centrifugation will take place with sealed safety rotors or safety buckets and will be loaded/unloaded in a biosafety cabinet.

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/20/26.

#30-26 Kelly Hughes. Coupling of flagellar gene expression to flagellar morphogenesis.

Genetic analysis of the biosynthesis of the bacterial flagellum and coupled gene regulatory mechanisms.

Outstanding issues to be resolved which were communicated to PI through post-review memo.
SciShield

- In the Pathogen Registration Form 'Salmonella Typhimurium'

- Indicate a Biological Safety Cabinet (BSC) is used for all aerosol generating actions (e.g., vortexing and opening of tubes, centrifugation, etc.). This practice is institutional policy (see U of U Institutional Biosafety Manual) and recommended guidance from the CDC and NIH (Biosafety in Microbiological and Biomedical Laboratories, 6th addition) for BSL-2 containment.

Biosafety Manual:

- Section I. Experimental Procedures:
  - Indicate a Biological Safety Cabinet (BSC) is used for all aerosol generating actions (e.g. vortexing and opening of tubes, centrifugation, etc.). This practice is institutional policy (see U of U Institutional Biosafety Manual) and recommended guidance from the CDC and NIH (Biosafety in Microbiological and Biomedical Laboratories, 6th addition) for BSL-2 containment.

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/21/26.

#32-26 Natalia Harasymowicz. The role of immune cells in pathogenesis of osteoarthritis.

Dr. Harasymowicz's laboratory studies Osteoarthritis (OA), a family of diseases characterized by the degradation of articular cartilage, joint inflammation, fibrosis of the synovium and joint fat pad, as well as alterations in bone structure. Tissue inflammation driven by immune cells is suggested to play an important role in exacerbating the pathogenesis of OA. Dr. Harasymowicz's lab focuses on investigating the role of immune cells in the progression of OA and aging. They use interdisciplinary approaches including molecular, genetic, and cellular techniques to understand the precise role of the immune system in OA.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **In SciShield:**
  - On the viral vector forms, safety sections for disinfection, if bleach is to be followed by 70% ETOH then a water rinse between is required to avoid chemical incompatibility.
- **Biosafety Manual:**
  - Provide an ECP. They can use Section D of the attached BSL-2 Manual Template and incorporate into section C (C.8)
  - In Section C.1 Training, the biosafety manual at the given link is out of date. For updated training information, PI needs to see the IBC training website, here: https://ibc.utah.edu/training.php
  - In Section C.3, Step 20, change the NOTE to "No untreated or non-disinfected biological agent-containing material, including recombinant and synthetic nucleic acids, should be allowed into any drain connected to the sanitary sewer system (e.g. from a sink)
  - For AAV, indicate "Yes" for 'Could the agent integrate into the genome.' Although it is unlikely, it is theoretically possible.
  - Appendix 5 SOP for Lentiviral Infection and Selection

Note: For any downstream assays that require removal of the cells from the BSC, describe how the cells will remain under containment, or indicate that the cells are lentivirus-free (have been passaged for 72 hours or longer and have undergone 5 or more media changes and/or washes) and pathogen free using the attached SOP

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/27/26.

#34-26 Katherine Ullman. Coordination of cell division: nuclear assembly and cytokinesis.

Their research projects focus on fundamental aspects of cell biology, including nuclear formation, cytokinesis, and the DNA damage response.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**

- In the Viral Vector Registration Form-SMART vector Inducible Lentiviral shRNAs
    - Step 1, '*Have any changes been made to the natural host range or tropism?'* Change the answer to 'Yes' due to VSV-g pseudotyping.

- **Biosafety Manual:**
    - The manual specifies a risk of HPV exposure for work with HeLa cells (Section B and Appendix 6). PI needs to note that HeLa cells have a partial HPV-18 genome integrated into chromosome 8, leading to the expression of some of the HPV-18 proteins. However, there is not any evidence for the production of HPV particles. The IBC does not require warnings of HPV exposure from HeLa cells. As with all human cells, it is possible that cultures could have any range of human pathogenic viruses due to accidental contamination.
    - The biosafety manual provided requires multiple administrative updates. The IBC suggests adopting the newest template manual to capture these updates. The current BSL2 Biosafety Manual Template is located https://ibc.utah.edu/_resources/documents/templates/biosafety_level_2__manual_template2024.docx
        - In the new manual, provide the Lentiviral Post-Exposure prophylaxis directives in the appropriate section (Section C), include lab-specific SOPs, and viral vectors maps. Contact the Biosafety Office for assistance as required.
        - If they choose not to adopt the current template, PI needs to make all of the below changes to their current manual:
    - When working with human source material (e.g. human cell lines), an Exposure Control Plan (ECP) must be included into the biosafety manual. Incorporate Section D and Appendix 10 of the template biosafety manual into their current biosafety manual. This can be included as an appendix or by creating section C.8.
    - Section B. Background.
        - Expand the background section to include a Risk Assessment, Signs and Symptoms of Infection, Prophylaxis and Treatment Options, and Methods of Disinfection and Inactivation for biologicals used in the laboratory.
        - Refer to Section C of the referenced template biosafety manual.
        - Include information relating to the Lentiviral vectors used in the laboratory.
    - Appendix 2 Post-exposure Standard Operating Procedures:
        - Provide information relative to Lentivirus and Lentiviral Vectors.
        - Incorporate the following information for lentivirus post-exposure prophylaxis:
            - Visit the Occupational Medicine Clinic. Managing occupational exposure to HIV-based viral vectors relies on the use of antivirals targeting the pre-integration steps, in order to prevent insertional mutagenesis. Post-exposure prophylaxis (PEP) should be administered as soon as possible, within 72 hours following any exposure. The following post-exposure prophylaxis are available:
                - Dolutegravir 50 mg taken once a day for 7 days
                - Tenofovir disoproxil fumarate 300 mg taken once a day for 7 days

              Important Notes:
                - These recommendations are for replication-deficient vectors.
                - Replication-competent vectors would require 28 days of treatment as with HIV.
    - Section C.1. Training.
        - Update the statement in paragraph 4, 'Documentation of training will be uploaded to the laboratory registration in BioRAFT' to indicate training records are maintained in the SAM system.
    - Section E.4 Autoclave.
        - Clarify the statement 'They have lab services pick up their contaminated materials to be autoclave.'
        - Is 'lab services' a contracting service provider?
            - In Section F.2 Laundry:
                - The address for the Hospital Laundry and Linen Services has changed from the School of Medicine. PI needs to update the address in their biosafety manual with the following:
                    - "The University of Utah Hospital can be used to clean contaminated clothing and other articles that require laundering. Linen Services can be found in the lower level of the Acute Care Building in the University Hospital, 801-581-2200."
    - Section I: Experimental Procedures:
        - This section is included with the table of contents, however, is labeled incorrectly in the provided manual.
        - Provide laboratory SOPs for work with human cell lines and the production and use of lentiviral vectors.
            - For any downstream assays, such as imaging, that require removal of the cells from the BSC, describe how the cells will remain under containment, or indicate that the cells are lentivirus-free

(have been passaged for 72 hours or longer and have undergone 5 or more media changes and/or washes) and pathogen-free
    - SOPs for Lentiviral production and transduction are attached to SciShield. Include these within the biosafety manual.
  - Provide vector maps for the lentiviral plasmids (including packaging and envelope plasmids) as an appendix to the biosafety manual.
- **Documentation:**
  - To comply with NIH regulations, the IBC is required to publish minutes from convened meetings, which they provide on the IBC website https://ibc.utah.edu/meeting-minutes.php . PI needs to inform us if their IBC registration contains proprietary information that cannot be included in the minutes.
  - PI needs to verify laboratory signage (BSL2/ABSL2 Warning sign) is up to date. Updated signage can be requested on SAM https://sam.ehs.utah.edu/ehsa/
  - Due to the risks of the agents used in their lab, enrollment in Occupational Medicine's Hepatitis B and Immunocompetence programs is required, regardless of vaccination status.
    - Contact Dr. Andy Phillips with Occupational Medicine for access to the health screening questionnaire in Open Range.
    - In the email, provide the lab name and all lab personnel uNIDs to Dr. Phillips.
    - Once contact with Dr. Phillips has been obtained this item is considered complete by the IBC.
  - The individuals listed below are listed as active personnel on the Project Form(s) in SciShield. Provide the applicable training certificates:
    - Only personnel listed in the table and who have provided complete all required training requirements will be approved for work under this registration.
    - To update active personnel, PI needs to log in to SciShield and revise the personnel listed on the Project Form(s).
    - Information on training can be found at: https://ibc.utah.edu/training.php

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 5/15/26.

#39-26 Jill Shea. Patient Derived Xenografts; RNA-guided CRISPR/Cas9 system to target malignant cells; Determining the Efficacy of a Novel Apatite-Based Antimicrobial Bone Scaffold for Craniofacial Surgical Applications.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **In SciShield:**
    - In the Recombinant or Synthetic Nucleic Acid Molecules Survey, change Q11) to “Yes”

- **Biosafety Manual:**
  - Section F: Laboratory Specific Standard Operating Procedures
    - For 'In Vivo Osteomyelitis Model and Scaffold Implantation' add the SOP for the preparation of the bacterial inoculum (Staphylococcus aureus).
- **Documentation:**
    - To comply with NIH regulations, the IBC is required to publish minutes from convened meetings, which they provide on the IBC website https://ibc.utah.edu/meeting-minutes.php . PI needs to inform us if their IBC registration contains proprietary information that cannot be included in the minutes.
    - PI needs to verify laboratory signage (BSL2/ABSL2 Warning sign) is up to date. Updated signage can be requested on SAM https://sam.ehs.utah.edu/ehsa/
    - Due to the risks of the agents used in their lab, enrollment in Occupational Medicine's Hepatitis B program is required, regardless of vaccination status.
      - Contact Dr. Andy Phillips with Occupational Medicine for access to the health screening questionnaire in Open Range.
      - In the email, provide the lab name and all lab personnel uNIDs to Dr. Phillips.
      - Once contact with Dr. Phillips has been obtained this item is considered complete by the IBC.
    - The individuals listed below are listed as active personnel on the Project Form(s) in SciShield.

- Only personnel listed in the table and who have provided complete all required training requirements will be approved for work under this registration.
- To update active personnel, PI needs to log in to SciShield and revise the personnel listed on the Project Form(s).

Information on training can be found at: https://ibc.utah.edu/training.php

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/23/26.

#40-26 Clement Chow. NGLY1 deficiency, Characterizing ATF4 pseudogenes, PIGA deficiency, characterization of stress responses in the context of other stresses, Genetic architecture of the in vivo ER stress response.

Their lab is focused on understanding the role of genetic variation on disease outcomes. They employ quantitative and functional tools, in a variety of model organisms, to study how genetic variation impacts basic cellular traits important to human health. Their work in model organisms will help to model and inform studies of genetic variation in the human population. They hope to identify variation that can lead to more precise, personalized therapies, especially for rare disease.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**
  - In the Human Source Material Survey: Edit the survey to indicate human cell lines are used for packaging viral vectors and are infected with viral vectors.
  - In the Recombinant or Synthetic Nucleic Acid Molecules Survey:
    - Q6-A Update to 'Yes' (Lentiviral vector in culture)
    - Q11 Update to 'Yes' and complete the updated question regarding Gene Drive.
  - In the Project Form *'Genetic architecture of the in vivo ER stress response'.*
    - Edit to provide the current IACUC protocol number.
    - Alternatively, update the description to indicate the mouse work has been completed and bioinformatics analyses are now ongoing. There is no active IACUC protocol at this time; however, a new IACUC protocol will be submitted prior to resuming the rodent studies described."
  - In the Project Form *'Characterizing ATF4 pseudogenes'*.
    - Verify the listed personnel is complete and includes all personnel who conduct work with Lentiviral viral vectors.
  - In the Viral Vector Registration Form (Lentivirus)
    - Step 1 "Have any changes been made to the natural host range or tropism?" Update this question to 'Yes' to reflect VSV use.
- **Biosafety Manual:**
  - In Section B. Background.
    - Expand 'Step 2' to include **'**The major risks associated with lentiviral vectors are insertional mutagenesis and local inflammation.'
  - In Section C.1. Training:
    - The link provided to the institutional biosafety manual is not valid.
    - For updated training information, PI needs to see the IBC training website, here: https://ibc.utah.edu/training.php
  - In Section F.2 Laundry:
    - The address for the Hospital Laundry and Linen Services has changed from the School of Medicine. PI needs to update the address in their biosafety manual with the following:
      - "The University of Utah Hospital can be used to clean contaminated clothing and other articles that require laundering. Linen Services can be found in the lower level of the Acute Care Building in the University Hospital, 801-581-2200."
  - In Section G, Experimental Procedures:
    - In the Lentivirus Infection Protocol it states, "Lentiviruses are safe reagents because they are replication deficient." This is not an adequate Biosafety risk statement and underestimates the risk of

working with these viral particles. Change to, "The lentiviruses used in this lab are designed to be low risk, as there is a very high barrier to the formation of replication competent viruses. However, they are capable of one round of entry and integration into a human cell. An exposure event can lead to insertional mutagenesis at the target site."
    - At the end of Section G, identify any downstream procedures, if any, that will be conducted on the live cells. Note that for any downstream assays that require removal of the cells from the BSC, describe how the cells will remain under containment, or indicate that the cells are lentivirus-free (have been passaged for 72 hours or longer and have undergone 5 or more media changes and/or washes) and pathogen-free as indicated in the SOP for work with 'Human cell use at BSL1'
- Appendix 2 Post-exposure Standard Operating Procedure
    - In Signs and Symptoms of Exposure/Infection with this agent: Include 'The major risks associated with lentiviral vectors are insertional mutagenesis and local inflammation.'
        - Incorporate the following information for lentivirus post-exposure prophylaxis:
            - Visit the Occupational Medicine Clinic. Managing occupational exposure to HIV-based viral vectors relies on the use of antivirals targeting the pre-integration steps, in order to prevent insertional mutagenesis. Post-exposure prophylaxis (PEP) should be administered as soon as possible. The following post-exposure prophylaxis are available:
                - Dolutegravir 50 mg taken once a day for 7 days
                - Tenofovir disoproxil fumarate 300 mg taken once a day for 7 days

              Important Notes:
                - These recommendations are for replication-deficient vectors.
                - Replication-competent vectors would require 28 days of treatment as with HIV.
- Appendix 5 'Model Lentivirus Protocol':
    - This SOP appears to be template stock. Remove this SOP to avoid confusion with the laboratory SOP as supplied in Section G.
- Appendix 6 Testing Lentiviral Vector Stocks for Replication Competent Virus:
    - This SOP appears to be template stock. Confirm testing for replication competent viral vector stocks is carried out within the laboratory. If this testing is completed, provide a laboratory specific SOP describing the method. However, as the Lentiviral Vector is 3rd generation RCV testing is not required and this section their be archived.
- Remove Appendices 8, 9, 10 as these sections are not applicable to this manual.
- Due to the use of human source material (e.g. human cell lines), an Exposure Control Plan (ECP) must be included into the biosafety manual. Incorporate Section D and Appendix 10 of the template biosafety manual https://ibc.utah.edu/_resources/documents/templates/biosafety_level_2__manual_template2024.docx into their current biosafety manual. This can be included as an appendix or by creating section C.8.

- **Documentation:**
    - To comply with NIH regulations, the IBC is required to publish minutes from convened meetings, which they provide on the IBC website https://ibc.utah.edu/meeting-minutes.php . PI needs to inform us if their IBC registration contains proprietary information that cannot be included in the minutes.
    - PI needs to verify laboratory signage (BSL2/ABSL2 Warning sign) is up to date. Updated signage can be requested on SAM https://sam.ehs.utah.edu/ehsa/
    - Due to the risks of the agents used in their lab, enrollment in Occupational Medicine's Hepatitis B program is required, regardless of vaccination status.
        - Contact Dr. Andy Phillips with Occupational Medicine for access to the health screening questionnaire in Open Range.
        - In the email, provide the lab name and all lab personnel uNIDs to Dr. Phillips.
        - Once contact with Dr. Phillips has been obtained this item is considered complete by the IBC.
    - The individuals listed below are listed as active personnel on the Project Form(s) in SciShield.
    - Only personnel listed in the table and who have provided complete all required training requirements will be approved for work under this registration.
    - To update active personnel, PI needs to log in to SciShield and revise the personnel listed on the Project Form(s).
    - Information on training can be found at: https://ibc.utah.edu/training.php

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/16/26.

#127-22.03 Yue Lu. A digital microfluidic approach to rapidly determine the sterility of biopharmaceutic delivery vesicles; digital microfluidic methods to monitor the human gut microbiota. Amendment to add new projects with many bacterial agents. BSL-2.

The Digital Pharmaceutics Laboratory aims to develop and apply state-of-the-art technologies to understand disease pathologies and treatment response as well as develop treatment strategies for cancer, infectious disease, and beyond.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **In SciShield:**
    - In the Pathogen Forms under Step III Safety, change references of "10% bleach" with "a freshly prepared 1:10 dilution of bleach"
- **SOPs**
    - Change all references of "10% bleach" to "a freshly prepared 1:10 dilution of bleach"
    - SOP 5: Stool Sample Digital Microfluidic Processing, add a note in the beginning to indicate "all stool sample microfluidic processing will take place in a BSC" as done for other SOPs.

- **Biosafety Manual:**
    - Provide a separate BSL-2 Biosafety Manual for work with this secondary work location.
    - A current Biosafety Manual Template can be located at https://ibc.utah.edu/_resources/documents/templates/biosafety_level_2__manual_template2024.docx
    - In the manual include the Risk Assessment (in Section C) and SOPs (in Section F) that were provided for IBC review, after applying the above corrections to the SOPs.
    - The biosafety manual can be uploaded into SAM.

PI has not responded to post-review memo. Reminder email sent 5/14/26.

#33-26 Marina Venero Galanternik. Mechanism of meningeal development and function.

Research in the Venero Galanternik lab focuses on the meninges, an extremely important but poorly understood set of membranous tissues that envelop and protect the vertebrate central nervous system (CNS). The meninges are essential for waste removal from the brain and brain homeostasis, and they protect the CNS from mechanical insults and infection. Meningeal dysfunction due to disease is both highly prevalent and associated with high levels of morbidity and mortality. It is estimated that nearly 3 million cases of meningitis occur globally each year, causing the death of approximately 30% of these patients, and survivors are frequently left with permanent neurological damage. Similarly, pathological meningeal waste accumulation associated with a variety of chronic diseases and with aging is highly associated with neurodegeneration and neurocognitive decline. Despite their critical roles, little is known about resident meningeal cell populations and how they work together to accomplish their important protective functions.

Outstanding issue to be resolved, which were communicated to PI through email.

- Rooms and spaces for where fish are kept need to be updated in SciShield.

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/17/26.

#37-26 Thomas Luo. Neural circuits underlying cognition in rodents. AAV. BSL-1/ABSL-1. New Registration.

Brains make decisions, shift attention, and learn through the coordinated activity of thousands to millions of neurons. Although individual neurons may appear noisy or disorganized, together their activity forms structured patterns that reveal how the brain computes.

The Luo Lab studies these collective dynamics using large-scale neural recordings in rats performing complex tasks, combined with machine learning models. They aim to understand how neural circuits filter incoming signals, store information, and guide actions, as well as how these computations vary across brain regions, adapt with learning, and depend on specific cell types. Ultimately, their goal is to uncover the emergent functions of biological neural networks that give rise to intelligent behavior.

PI responded to pre-screen memo.

- **SciShield:**
- In the '*Viral Vector Registration Form-pAAV-hSyn-ACh4.3, pAAV-CB7-CI-mCherry-WPRE-RBG*'
    - Step 1. '*Does their vector system include a helper virus?*' is marked 'Yes'. PI needs to verify if a helper virus, such as adenovirus, is used. Typically, helper genes are provided via plasmid, rather than a full helper virus.
- In the Viral Vector Registration Form'-*pAAV-hsyn-NE2m(NE3.1), pAAV-CB7-CI-mCherry-WPRE-RBG*'
    - Step 1. '*Does their vector system include a helper virus?*' is marked 'Yes'. PI needs to verify if a helper virus is used.
    - Step 4. *'Will this virus (or cells transduced by this virus) be used in laboratory animals?*' Is answered 'No'. However, the description indicates animal model use. PI needs to clarify.
- In the Viral Vector Registration Forms-*'pAAV-Ef1a-DIO hChR2(E123T/T159C)-EYFP' and 'pAAV-hSyn1-SIO-eOPN3-mScarlet-WPRE'*
    - Step 4. *'Will this virus (or cells transduced by this virus) be used in laboratory animals?*' Is answered 'No'. However, the description indicates animal model use. PI needs to clarify.

PI responded to post-review memo. Responses were evaluated by BSO and ABSO. Approval granted 4/17/26.

Protocols for Review With 3 Year Approval

#36-26 Shannon Buckley-McKeown. Posttranslational regulation of normal and malignant hematopoiesis.

Molecular mechanisms regulating leukemia and lymphoma

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **Biosafety Manual:**
    - Page 5, Section B.1.b. Background, in the risk assessment for Murine Leukemia Retrovirus replace ecotropic with amphotropic since it can infect more than just murine cells. Replace the description of risk to include the possibility of a single round of infection and possible integration at an exposure site.
    - Page 6, Section B.3.a. note that this post-exposure prophylaxis also extends to exposures to retroviral vectors, like your MLV vectors.

PI Cites NIH Guidelines: III-D-1, III-D-4-a, III-D-4-c-(2), III-E-3
Agent: Lentivirus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☒ | Expanded Tropism ☒ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Transgenes and Sources: N-SF, GFP, MycT58A, from human sources

Agent: Retrovirus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☒ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒|

Antibiotic Resistance ☐
Transgenes and Sources: mCherry, N-SF from human sources

Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☒
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☒ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Solid Front Rear Closing Gown, Double Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 Enhanced (BSL-2+) and Animal Biosafety Level 1 (ABSL-1)
Vote for Motion: 19 For Motion | 0 Abstain

#41-26 Haley Licon. Project 1: Molecular regulation of Toxoplasma's sexual cycle; Project 2: A Scalable System for Conditional Overexpression in Toxoplasma gondii.

Their research is focused on the genetic programs that control life stage conversion in the apicomplexan parasite, Toxoplasma gondii. They are particularly interested in the process of sexual development, which is restricted to feline hosts. Currently, they are using functional genomics and transgenic parasite modeling to map the transcriptional architecture of Toxoplasma's pre-sexual and sexual stages, as well as both fixed and live cell imaging to assess development over time. They are also interested in exploring the host environmental factors that induce the transition from asexual to sexual reproduction.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **Biosafety Manual:**
  - Section F. Lab SOPs, it is noted that all waste from experiments with the potential to lead to oocyst generation, both liquid and solid, will be autoclaved prior to disposal. To do this safely since bleach cannot be autoclaved, please add in a step to deactivate the bleach with sodium thiosulfate before autoclaving.
  - Page 18, Section 2 Live Imaging, step d, add another point that says “This includes IBC registration and periodic EHS biosafety inspections.”

PI Cites NIH Guidelines: III-D-1, III-D-2
Agent: Toxoplasma gondii
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Risk Assessment: Sharps☒ | Vortexing ☒ | Sonicating☐ | Cell Sorting☒ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☒ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach or 5% hydrogen peroxide
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 (BSL-2)
Vote for Motion: 19 For Motion | 0 Abstain

#42-26 Ming Hammond. Enabling High-Throughput Analysis and Single-Cell Imaging of Bacterial Signals; Biosensors for rapid prototyping of functional biomaterials; QUANTITATIVE ORTHOGONAL STAINING FOR BIOLOGICAL ELECTRON MICROSCOPY IMAGING; LIGHT-UP PROBES FOR RAPID DIAGNOSIS OF ANTIBIOTIC RESISTANCE IN URINARY TRACT INFECTIONS.

The Hammond lab has a dual focus on engineering nucleic acids as programmable tools for molecular imaging and gene regulation, and on understanding the chemistry and biology of cyclic dinucleotides as signaling molecules in bacteria and mammalian cells.

All pre-screen comments were resolved and no additional concerns were raised during the meeting.

PI Cites NIH Guidelines: III-E
Agent: Bacillus subtilis, Baillus megaterium, E. coli (UTI189), Staphylococcus aureus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☒ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☒ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve at Biosafety Level 2 (BSL-2)
Vote for Motion: 19 For Motion | 0 Abstain

#44-26 Darrel Davis. Antiviral Drug Discovery; SARS-CoV-2 Drug Discovery. Coronavirus, Hepatitis C, Zika Virus.

Antiviral and Anticancer Drug Discovery.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**
  - In the biosafety manual, transport of samples to the Elde lab is described. Provide the biosafety office with a list of all rooms/spaces used with your experiments.
  - Project form, “Antiviral Drug Discovery”
    - The project aim was last updated in 2019. Please confirm the ‘Project Description & Scientific Aim(s)’ and the “Description of Experimental and Procedural Details’ are unchanged, or provide updates on the form.
    - The section *“Project Biological Materials & Details, Description of Experimental and Procedure Detail”* Indicates “May extend to other members of the Flavivirus family, these viruses will be under the same control levels as HCV and/or Zika.”
      - **Note**: The use of any additional viruses will require IBC approval prior to use. IBC approval is not a blanket approval for any flavivirus.
  - Project Form ‘SARS-CoV-2 Drug Discovery’
    - The project aim was last updated in 2021. Please confirm the ‘Project Description & Scientific Aim(s)’ and the “Description of Experimental and Procedural Details’ are unchanged, or provide updates on the form.
    - In the Description of Experimental and Procedural Details.
      - Remove the statement *‘Specifically, the human coronavirus OC43 genomic RNA can be obtained from BEI Resources (NR-52757). The RNA is BEI level 1 categorized. The complete OC43 human coronavirus has catalog NR-52757 and is listed as BEI level 2.’* As this information is provided in the Pathogen Registration Form.
  - In the Pathogen Registration Form ‘Virus- Human Coronavirus OC43’
    - Step 1 Clarify if the source of the virus is the Elde Lab. If laboratory stocks or an alternative vendor are utilized, please also include these sources.
    - Step 3 Safety:
      - Remove N-95 respirator usage as N-95 protection is not required with OC43 when working in a biological safety cabinet.
  - Viral Vector Registration: Virus - Zika -Flaviviridae
    - Clarify the source of this virus. In the registration the source is listed as the ‘Fujinami Laboratory’. As Dr. Fujinami is no longer with the institution, If laboratory stocks or an alternative vendor are utilized, please also include these sources..
  - Viral Vector Form, “JFH1-Rluc”
    - Step 5, Safety

- 'What adverse effects might result from inadvertent contact with this vector?' indicates 'none.' The adverse effects of HCV should be listed here. If the vector is replication incompetent or otherwise designed for laboratory safety, describe that in the form.

- **Biosafety Manual:**
  - Section B.5 Training
    - The link to the Institutional Biosafety Manual requires update. The current link is https://ibc.utah.edu/biosafety-policies.php
  - Section C.3 Hepatitis B Vaccination:
    - Delete the paragraph beginning *'However, if an employee chooses to decline vaccination, the employee must sign a declination form.'* As Occupational Medicine tracks this program.
    - Update the sentence "Vaccination will be coordinated and paid for through OEHS, as provided by the Student Health Clinic." to indicate RedMed is the clinic location for vaccination.
  - Section C.6 Incident Reporting:
    - The contact information for the University of Utah Benefits Department is incorrect. Please update with correct information or remove the statement '
      - *The Benefits Department is located:*
        250 East 200 South, Suite 125

        Salt Lake City, Utah 84111

        Phone: 801.581.2169

  - Section F.2 Laundry:
    - The address for the Hospital Laundry and Linen Services has changed from the School of Medicine. Please update the address in your biosafety manual with the following:
      - "The University of Utah Hospital can be used to clean contaminated clothing and other articles that require laundering. Linen Services can be found in the lower level of the Acute Care Building in the University Hospital, 801-581-2200."
  - Remove Appendix 4. Hepatitis B Vaccination Attestation forms are digitally managed by the Occupational Medicine Program.
  - Appendix 5: Flavivirus Protocols – HCV specific Reference.
    - In the Experimental Protocols for HCoV-OC43, indicate secondary containment used for transport outside of the BSC during the freeze/thaw cycles at -80C
    - References to MHV are found on page 45 of the biosafety manual. Remove references to MHV as this virus is not described in the registration
    - A statement indicated viral stocks are transported between research buildings. Clarify if this transport is ongoing. If so, contact the biosafety office to add the additional spaces to the registration.
    - Include a description of disinfection/disposal methods used with these SOPs
  - Appendix 10 Post Exposure Fact Sheet:
    - The current documentation indicates '*All personnel working with SARSCoV-2 must be fully vaccinated against Coronavirus AND a monthly asymptomatic PCR testing result must be submitted until laboratory work with the SARS-CoV-2 replicon plasmids is terminated.'*
      - Clarify if this practice is ongoing
      - Provide updated directives as appropriate.
- **Documentation:**
  - To comply with NIH regulations, the IBC is required to publish minutes from convened meetings, which we provide on the IBC website https://ibc.utah.edu/meeting-minutes.php . Please inform us if your IBC registration contains proprietary information that cannot be included in the minutes.
  - Please verify laboratory signage (BSL2/ABSL2 Warning sign) is up to date. Updated signage can be requested on SAM https://sam.ehs.utah.edu/ehsa/
  - Due to the risks associated with the agents used in your laboratory, enrollment in the Occupational Medicine Hepatitis B program and the Immunocompetence program is required, regardless of vaccination status.

- Contact Dr. Andy Phillips with Occupational Medicine for access to the health screening questionnaire in Open Range.
- In the email, provide the lab name and all lab personnel uNIDs to Dr. Phillips.
- Once contact with Dr. Phillips has been obtained this item is considered complete by the IBC.

- The individuals listed below are listed as active personnel on the Project Form(s) in SciShield. Provide the applicable training certificates:
- Only personnel listed in the table and who have provided complete all required training requirements will be approved for work under this registration.
- To update active personnel, please log in to SciShield and revise the personnel listed on the Project Form(s).

Information on training can be found at: https://ibc.utah.edu/training.php

PI Cites NIH Guidelines: III-D-1, III-D-3, III-E-1
Agent: Hepatitis C Virus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Transgenes and Sources: hRluc from Renilla reniformis

Agent: Coronvirus OC43
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Agent: Zika Virus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Tabled
Vote for Motion: 19 For Motion | 0 Abstain

#46-26 Jason 'Jay' Gertz. Gene Regulation in Breast and Endometrial Cancers. Lentivirus.

Their research goal is to understand how transcription factors choose their genomic binding sites, how binding events lead to gene expression changes, and how the actions of transcription factors are altered in cancer. To determine the roles that transcription factors play in gene regulation, they develop and apply experimental methods that take advantage of next-generation sequencing to create high-resolution maps of gene regulatory networks. They also utilize and create computational approaches to take full advantage of these rich genomic datasets.

All pre-screen comments were resolved and no additional concerns were raised during the meeting.

PI Cites NIH Guidelines: III-D-3, III-E, III-E-3
Agent: Lentiviral Vector
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☒ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐|

Antibiotic Resistance ☐
Transgenes and Sources: Guide RNA from human sources

Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☒ | Centrifuging☒ | Oncogene ☒
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☒ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Solid Front Rear Closing Gown, Double Gloves, Safety Glasses
Motion: Approve at Biosafety Level 2 Enhanced (BSL-2+)
Vote for Motion: 19 For Motion | 0 Abstain

#47-26 Stavros Drakos. Understanding the mechanism of AEBP1-Mediated fibrosis post-Cardiac injury in heart failure; Transcriptional Regulation of Gene Expression in Post-myocardial Infarction Fibrosis; Viral transfection using AAV; Viral transfection using Adenovirus; Mechanism of Eccentric Cardiomyocyte Hypertrophy Secondary to Mitral Regurgitation.

Their overall research focuses involve understanding the etiology and the progression of heart failure (HF). Their interests are directed toward elucidation of molecular pathways and mechanism that leads to HF in human. Their research utilize both the actual human diseases and animal models to dissect the causes and effects of HF to identify and develop therapeutic targets for intervention that will benefit HF patients. Their goal is to understand the recovery process using the observed recovery paradigm in their study of mechanical circulatory support in HF patient. They would like to identify the therapeutic targets the can be developed as viable intervention for treatment of HF patients.

Outstanding issues to be addressed which were communicated to PI through post-review memo.
SciShield https://utah.scishield.com/node/1448234/biologicals/bioSummary

- In the Project Form 'Mechanism of Eccentric Cardiomyocyte Hypertrophy Secondary to Mitral Regurgitation'
  - Update the containment to be 'BSL2' to capture the use of human tissues in the project
- In the table titled “Plasmids Used in Lab,” hATF3 indicates that you are producing the viral particle, but elsewhere in the registration it is stated that these will be purchased. Change the answer to “Viral Particle Production” to say ‘No.’
- In the Viral Vector Registration Forms Step 5 Safety:
  - Include a water rinse between the application of bleach and ethanol solutions to avoid chemical incompatibilities.
- In the ‘Viral Vector Registration Form-AAV9’
  - Update Step 5, details for disinfection, to include direct disposal of syringe/needle unit into sharps container, rather than the indicated overnight disinfection described. This is done in an attempt to minimize sharps handling.

Biosafety Manual:

- Section B.3. Training.
  - Include Initial 'Viral Vector Training: Repeated every 3 years'
- Appendix 2: Post-exposure Standard Operating Procedure
  - Update the question "if yes, have personnel been offered vaccination" to be 'No' or 'N/A' as a vaccination is not available for these agents.
- Appendix 7: Provide the viral vector maps to accompany the sequences provided.

PI Cites NIH Guidelines: III-D-1, III-D-3, III-D-4, III-E-3
Agent: Adenoviral Vector
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Transgenes and Sources: AEBP1, SMOC2, CD38 from human sources

Agent: AAV Vector
Tissue Culture ☒ | Animal Work ☒ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Transgenes and Sources: SMOC2, AEBP1 from human sources

Risk Assessment: Sharps☒ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☒ | Restraints ☐ | Safer Sharps☒ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 (BSL-2) and Animal Biosafety Level 1 (ABSL-1)
Vote for Motion: 19 For Motion | 0 Abstain

#29-24.10 Allison Carey. Amendment to add Mycobacterium tuberculosis and Mycobacterium bovis.

Their lab is focused on the genetics and genomics of pathogenic mycobacteria, including the global health pathogen Mycobacterium tuberculosis and a group of environmental mycobacteria called 'non-tuberculous mycobacteria' (NTM). They seek to understand how bacterial genetic diversity impacts clinically relevant phenotypes including antibiotic resistance, pathogenesis, and vaccine escape. They use advanced bacterial genetic tools including transposon mutagenesis and barcoding combined with in vitro models as well as mouse and cell culture models of infection to address these questions.

Specific comments in the lab-specific BSL-3 manual have been provided. Establishment of BSL-3/ABSL-3 Facility Governance policy is still underway. The protocol is approved on the contingencies that: 1) comments are addressed in the lab-specific BSL-3 manual to the satisfaction of the BSL-3 Operations Team, 2) BSL-3/ABSL-3 Facility governance is finalized and approved by the VPR, 3) the facility is commissioned and operational.

Agent: Mycobacterium tuberculosis
Tissue Culture ☒ | Animal Work ☒ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Agent: Mycobacterium bovis
Tissue Culture ☒ | Animal Work ☒ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☒
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☐ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☒ | Safer Sharps☒ | Enhanced PPE ☐ | Treatment Available ☒ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Tyvek Suit, Disposable Sleeves, n95 or PAPR, Double Gloves
Motion: Approve with contingencies at Biosafety Level 3 (BSL-3) and Animal Biosafety Level 3 (ABSL-3)
Vote for Motion: 19 For Motion | 0 Abstain

#62-24.01 Michael Kay. Amendment to add new pseudovirus to protocol.

Their lab uses mirror-image phage display and structural-assisted design to develop D-peptide inhibitors of biomedically relevant protein/protein interactions. Currently, they are targeting enveloped viral entry of coronaviruses, HIV, and henipaviruses and historically they have had programs targeting filoviruses and paramyxoviruses. Additionally, they have projects aimed at discovering inhibitors of Shiga toxin (only the non-toxic B subunit) and FimH, a bacterial adhesion factor. A key component of the mirror-image phage display process is a D-protein target. To continually expand the range of targets available, their lab also develops new techniques for chemical protein synthesis, attempting to increase the length of proteins accessible to routine chemical synthesis.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- SciShield:
    - In the project titled *Inhibiting Entry of Membrane Viruses,* add a statement that the pseudovirus will be purchased from commercial source.
    - In the viral vector form for Nipah Pseudovirus, replace references of 10% bleach with "a freshly prepared 1:10 dilution of bleach".
- Biosafety Manual
    - In Section B Background, Step 1 Risk Assessment, third paragraph about alphavirus based pseudovirus add that NSP2 protein is known to be cytopathic and may lead to a cytoxic effect on cells and tissues around the exposure site.

PI Cites NIH Guidelines: III-D-1, III-D-2, III-D-3, III-E, III-E-1
Agent: Nipah pseudovirus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 (BSL-2)
Vote for Motion: 18 For Motion | 1 Abstain

#19-25.03 JB. Lubin. Amendment to add Akkermansia ssp. Desulfovibrio piger, Citrobacter rodentium, and Candida ssp.

Their lab is dedicated to understanding of how the intersection of diet and microbial metabolism in the infant microbiome impacts neonatal infection and immunity. Their research is focus on mouse models of infant microbial communities and incorporates microbiology, genetics, biochemistry, bioinformatics and immunology.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**
    - Describe the use of Candida in a relevant project form. In the description include a brief description and rationale for the of use of Candida in the gut. The IBC is concerned of the use of Candida auris due to its significant morbidity and mortality in hospital-acquired infections and its antifungal resistance.
    - In all of the Pathogen Registration Forms:
        - Step 3 Safety:
            - Remove reference to 'skirt' being worn as proper laboratory attire.

        - Update required PPE to include Lab coat, nitrile gloves, safety glasses.
        - Update to indicate centrifuge safety cups are used with all Risk Group 2 materials.
    - Provide individual Pathogen Registration Forms for each Candida species as the Risk Assessment is different for each of the listed strains.
        - Include the 'Institutional Collaborator' supplying the material in response to the question '*Where will you obtain the infectious agent?'*
        - Due to an elevated risk of work with Candida auris, include BSL2 Enhanced PPE of Solid Front/Rear Closing Lab coat, Double Nitrile Gloves, Safety Glasses.

- **Biosafety Manual:**
    - Provide an SOP for the use of Candida spp. The SOP should include the species of any animal model used, a description of the experimental procedure(s), a description of the laboratory biological safety containment used for the injection (e.g., indicate if a biosafety cabinet will be used during the injection), precautions for needle safety, and a brief overview of the injection process, including the route of administration and safety devices used during injection.
    - In the Handling and Administration of Pertussis Toxin (PTX) SOP
        - Step 3 states *'Load syringes inside the BSC immediately before injection; keep capped until animals are restrained.'*
            - It appears the syringe is loaded with Pertussis Toxin, then the needle is re-capped until the animal is restrained. Provide clarification of needle safety to indicate the needle is not recapped and does not pose a threat to worker safety.
            - Alternatively, the needle could be removed via the tool on the sharps container lid, and replaced with a new needle to avoid a recapping procedure.

PI Cites NIH Guidelines:
Agent: Akkermansia, Desulfovibrio piger, Citrobacter rodentium, Candida
Tissue Culture ☒ | Animal Work ☒ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☐ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☒ | Safer Sharps☒ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Table
Vote for Motion: 18 For Motion | 1 Abstain

#22-25.01 Ramesh Goel. Amendment to add Leclercia sp. (BSL-2)

They are currently engaged in environmental and applied microbiology research, including biological reactor systems for sustainable nutrient removal, bacteriophages research on nutrient cycling and horizontal gene transfer in wetlands, and disinfection kinetics of antibiotic resistant bacteria and gene expression of antibiotic resistance genes.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **General Question:**
    - The IBC was told at renewal in 2025 that most of the agents in your lab are in long-term storage. At the beginning of Appendix 4 (SOP) there was a statement, "The agents listed in this section are currently in long-term storage. Please contact the Biosafety Office prior to using these agents." In the current Appendix 4, that statement has been removed. Are the agents in your lab, except Leclercia and Microcoleus, still in archival storage, or have you begun working with them again? If the latter, the IBC will need to extend our review to cover these agents.
- **Biosafety Manual**

- Page 64, Microcoleus sp Culturing Protocol, add a note to the Methods section that states that all work with Microcoleus will take place in a biosafety cabinet.
- Page 67, Section 6.4, currently states that you are going to add 5mL of acidified methanol into a 1.5 or 2 mL microcentrifuge tube. Edit this section with the correct volumes, since 1.5 mL or 2 mL tubes will be unable to hold 5 mL.
    - Also note, only small amounts of organic solvents can be used in a BSC since filtered air from the BSC is recirculated into the room, unless connected to the building's HVAC system.

Agent: Leclercia, Microcoleus
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☒| Antibiotic Resistance ☐
Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☐ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 (BSL-2)
Vote for Motion: 18 For Motion | 1 Abstain

#128-25.01 Randy Peterson. Amendment to add Lentiviral Vector back into protocol.

The Peterson lab is using the tools of chemical biology to investigate complex in vivo phenomena. By conducting high-throughput screens with intact, living zebrafish, small molecules can be discovered that alter virtually any biological process. The lab is applying this approach in three areas: 1) developmental biology, including cardiovascular development and germ cell development; 2) disease physiology, including heart failure, anemia, and neurodegenerative diseases; and 3) animal behaviors. In each of these areas, the novel small molecules discovered are providing new biological insights and/or novel therapeutic opportunities.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**
    - Edit the 'Second Generation Integrase Competent and Deficient Lentiviral Systems' project form and update the containment level to Biosafety Level 2 Enhanced (BSL-2+).
        - In the same project form, update the rooms and spaces to include SRB 3440.
    - In the Recombinant or Synthetic Nucleic Acid Molecules Survey, update questions 4, 6, 6a, 6b to be 'Yes' .
    - In the Human Source Survey, update responses to include:
        - 'Infect/transduce human cells with recombinant viruses'
        - 'Infect/transduce human cells with viral vectors'
        - 'Use cell lines for packaging viral vectors'
        - Be sure to save these updates within the 'Save and Continue' tab
    - Add Lentivirus to the table of Viruses used in Lab.
- **Biosafety Manual:**
    - Appendix 2 Post-exposure Standard Operating Procedure
        - Incorporate the following information for lentivirus post-exposure prophylaxis:
            - Visit the Occupational Medicine Clinic. Managing occupational exposure to HIV-based viral vectors relies on the use of antivirals targeting the pre-integration steps, in order to prevent insertional mutagenesis. Post-exposure prophylaxis (PEP) should be administered as soon as possible, within 72 hours following any exposure. The following post-exposure prophylaxis regimens are available:
                - Preferred single-tablet regimen:

        - Bictegravir (50 mg)/tenofovir alafenamide (25 mg)/emtricitabine (200 mg) (Brand name: Biktarvy) once daily
    - Preferred multi-tablet regimen:
        - Dolutegravir (Brand name: Tivicay) 50 mg taken once a day for 7 days
        - Tenofovir disoproxil fumarate/emtricitabine (Brand name: Truvada) 300 mg taken once a day for 7 days

Important Notes:

- These recommendations are for replication-deficient vectors.
- Replication-competent vectors would require 28 days of treatment as with HIV.

- **Documentation:**
    - To comply with NIH regulations, the IBC is required to publish minutes from convened meetings, which we provide on the IBC website https://ibc.utah.edu/meeting-minutes.php . Please inform us if your IBC registration contains proprietary information that cannot be included in the minutes.
    - Please verify laboratory signage (BSL2/ABSL2 Warning sign) is up to date. Updated signage can be requested on SAM https://sam.ehs.utah.edu/ehsa/
    - Due to the risks associated with the agents used in your laboratory, enrollment in the Occupational Medicine Hepatitis B program and the Immunocompetence program is required, regardless of vaccination status.
        - Contact Dr. Andy Phillips with Occupational Medicine for access to the health screening questionnaire in Open Range.
        - In the email, provide the lab name and all lab personnel uNIDs to Dr. Phillips.
        - Once contact with Dr. Phillips has been obtained this item is considered complete by the IBC.

PI Cites NIH Guidelines: III-D-4, III-D-4-a, III-E
Agent: Lentiviral Vector
Tissue Culture ☒ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☒ | Replication Competent ☐ | Second Generation ☒ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Transgenes and Sources: attB, attP, GFP, phiC31, Bxb1, Pc64, Cp36, pf8-, PAC, NTR from bacterial sources

Risk Assessment: Sharps☐ | Vortexing ☒ | Sonicating☐ | Cell Sorting☒ | Centrifuging☐ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☒ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☒ | Treatment Available ☒ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Solid Front Rear Closing Gown, Double Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 2 Enhanced (BSL-2+)
Vote for Motion: 18 For Motion | 1 Abstain

Protocols for Review With 5 Year Approval

#48-26 Nitin Phadnis. Molecular basis of speciation in Drosophila; Molecular basis of segregation in Drosophila.

Understanding the genetic and molecular basis of speciation in Drosophila.

Outstanding issues to be addressed which were communicated to PI through post-review memo.

- **SciShield:**
    - In the Project Forms: Provide experimental details and procedures/techniques used. Specifically, include a description of how genetic manipulation in the flies is being performed. Include whether or not any of the

genetic manipulations lead to the formation of a gene drive, how containment is accomplished to prevent the release of genetically engineered flies, and how the flies are decontaminated prior to disposal.
    - In the Recombinant or Synthetic Nucleic Acid Molecules Survey:
        - This survey has additional questions 7-G, 7-H that have been added since your last renewal. Provide an answer to these questions.
- **Biosafety Manual:**
    - Section C.4. Incident Reporting:
        - Update the link for incident reporting to https://sam.ehs.utah.edu/ehsa/
    - Section D.3. Experimental Standard Operation Procedures:
        - Provide SOPs for the use and handling of arthropods.
- **Documentation:**
    - Provide documentation that all personnel have completed lab-specific training within the past year. This can be accomplished by review and signing the Biosafety manual and SOPs.

PI Cites NIH Guidelines: III-D-4-a
Agent: Transgenic Drosophila
Tissue Culture ☐ | Animal Work ☒ | Patient Samples ☐ | Human Gene Transfer ☐ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☐ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☐ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Risk Assessment: Sharps☒ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☒ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☐ | Fume Hood☐ | Sealed Rotor or Safety Buckets☐ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve with contingencies at Biosafety Level 1 (BSL-1)
Vote for Motion: 18 For Motion | 1 Abstain

Protocols for Review, Requiring IBC Approval Before Initiation, Transfer of rsNA into Humans

#45-26 Vaia Florou. Dispatch DISP-10-101 (WCG) >> A Phase 1 Study to Evaluate the Safety and Efficacy of DISP-10 in Participants with Advanced Gastrointestinal Cancers.

All pre-screen comments were resolved and no additional concerns were raised during the meeting.

PI Cites NIH Guidelines: III-C
Agent: DISP-10, Adenovirus
Tissue Culture ☐ | Animal Work ☐ | Patient Samples ☐ | Human Gene Transfer ☒ | Environment Samples ☐
Agent Characteristics: Attenuated/Vaccine Strain ☐ | Replication Incompetent ☐ | Replication Competent ☒ | Second Generation ☐ | Third Generation ☐ | Expanded Tropism ☒ | Narrowed Tropism ☐ | Wild Type Tropism ☐| Antibiotic Resistance ☐
Deletions: DV-10 has a partial deletion of E3, deletion of E4orf4 from E4
Risk Assessment: Sharps☒ | Vortexing ☒ | Sonicating☐ | Cell Sorting☐ | Centrifuging☐ | Oncogene ☐
Risk Mitigation: Biosafety Cabinet☒ | Fume Hood☐ | Sealed Rotor or Safety Buckets☒ | Anesthetization☐ | Restraints ☐ | Safer Sharps☐ | Enhanced PPE ☐ | Treatment Available ☐ | Vaccine Available ☐
Disinfectant: Freshly Prepared 1:10 Dilution of Bleach
PPE: Laboratory Coat, Gloves, Safety Glasses
Motion: Approve at Biosafety Level 2 (BSL-2)
Vote for Motion: 15 For Motion | Abstain

Lab/Protocol Closures

None

Spills and Incidents

None

Other Business

Upcoming job opening in Biosafety Office.

Next IBC meeting will be held June 18, 2026 in HSEB 3420.