Approved: 10/30/25

Minutes
September 25th, 2025
Institutional Biosafety Committee
233 Scott Hall

Attendance

Members Present:	Members Absent:	Non-Members Present:
T. Oomens (Chair)	T. Essary (Alt)	J. Kane
E. Lutter (Vice-Chair)	A. Mitra (Alt)	
A. Hall (Alt)	S. McFee (Alt)	
A. Fewell (BSO)	J. Olson (Alt)	
V. Freeman (Alt)	A. Ramachandran	
M. Cabeen	R. Matts	
D. Maples (Alt)	K. Southworth	
D. Christensen (Alt)	J. Ballard (Alt)	
B. Epperley (Alt)	W. Kipgen (Alt)	
D. Cunningham		
C. Franks		
I. Girardi (Alt)		
J. Gallaway		
M. Hinsdale		
B. Holcomb		

Note: In the event that both a member and their alternate are present, only the primary member's vote will count unless the primary member allows the alternate to vote in their place.

Call to Order - With a quorum present, the Chair called the meeting to order at 10:03 a.m. Committee introductions were made.

Approval of the July 24th, 2025 minutes – No concerns were raised. A motion was made to approve and seconded, majority vote was recorded and the minutes were approved.

Old Business

A. Protocol/Modification Update

1. **25-14** Madhan Subramanian, "Cellular senescence in obesity and aging associated neural dysfunctions"

Approved – 8/6/25

2. **23-23** Adel Pezeshki, "Dietary branched-chain amino acids restriction to improve insulin sensitivity: role of central FGF21 and gut microbiota."

Approved – 9/16/25

New Business

B. Protocols/Modifications for Review by Full Committee

1. **23-21** Joy Scaria, "Role of the gut microbiome members in health and protection against infectious diseases" - Modification

Category: Biological Agent and r(s)NA
NIH Guidelines: III-D-4 & III-F Other
Source of DNA: *Bacillus subtilis, Escherichia coli, Lactobacillus acidophilus, Clostridium perfringens*
Vector(s): Various plasmids
**Recipient Host(s*):* Escherichia coli, Mus musculus*
Biosafety Level: BSL-2
Project Summary:
Dr. Scaria's lab currently works to understand the mechanisms by which healthy human microbiota inhibit pathogens such as *C. dificile*. This involves the culturing of BSL-1 non-pathogenic strains, treating germ free mice with the strains, and then challenging them against common BSL-2 pathogens of interest including *C. dificile*. Dr. Scaria has also been approved to use a bioengineered version of a beneficial gut bacterium called Escherichia coli Nissle 1917 (ECN). By inserting a gene into this bacterium that enables it to produce enzymes to break down flavonoids, it could become an even more powerful probiotic, potentially improving overall health.

This modification to Dr. Scaria's protocol involves introducing recombinant E. coli strains into mice which will then be challenged against *C. difficile*. Per NIH Guidelines III-D-4, experiments in which recombinant microorganisms are administered to whole animals fall under this category. The work does not involve transfer of drug resistance traits or creation of higher-risk pathogens. As mentioned above, Dr. Scaria has already been approved to work with recombinant E. coli strains, but now he is transitioning to animal work with them.

A. Fewell gave an overview of the project informing the committee that all of Dr. Scaria's lab inspections had been previously completed, as well as all personnel were up to date with required enrollments. One committee member noticed that the BSC recertification date needed to be updated.

Items to be addressed:
1. The only issue brought up about Dr. Scaria's protocol was that BSC certification date on the protocol needs updated, the BSC is certified, the date on the protocol just needs corrected.

Motion: A motion was made to approve by T. Oomens. Motion was seconded by D. Cunningham. Majority vote was recorded, and the protocol was approved pending a minor edit.

2. 24-1 Khursheed Iqbal, "Dissecting the Molecular regulators of Trophoblast Lineage Development and function." - Modification
Category: Biological Agent and r(s)NA
NIH Guidelines: III-D-3 & III-E-3 & III-F
Source of DNA: Synthetic guide and shRNAs used in this study will be custom manufactured by commercial vendor IDTDNA Inc., Lentiviral (HIV)-based plasmid
Vector(s): pLKO.1, SARS-Related Coronavirus 2, Wuhan-Hu-1 Spike-Pseudotyped Lentiviral Kit V2, Vector pHDM Containing the SARS-Related Coronavirus 2, Wuhan-Hu-1 Spike Glycoprotein, pDG459, pLVX-M-puro, lentiCRISPR v2, scramble shRNA

Recipient Host(s): Human trophoblast cells, bovine epithelial cells
Biosafety Level: BSL-2
Project Summary:
Dr. Iqbal's previous work employed a loss-of-function approach using lentiviral-mediated knockdown. This technique generated human and mouse trophoblast stem cells (TSCs) with reduced or ablated expression of targeted genes. By differentiating these knockdown cell lines in vitro and analyzing their properties (phenotyping), his lab group could elucidate the function of the targeted genes in TSC differentiation. He has also investigated the efficiency of SARS-CoV-2 spike protein internalization and its impact on trophoblast stem cell development and differentiation.

Dr. Iqbal's modification will investigate the immunogenicity of individual components of highly pathogenic avian influenza (HPAI) Influenza A virus (IAV) in vitro using bovine epithelial cells and human trophoblast stem cells. The aim of this study is to investigate the effects of HPAI IAV viral components on human and bovine cells that are critical for pregnancy establishment, using well-established in vitro cell culture models. The viral components studied will include hemagglutinin (HA), neuraminidase (NA), and nonstructural protein 1 (NS1). Their coding sequences will be synthesized, cloned into mammalian expression vectors, and individually transfected into the selected cell types. ELISA, qPCR, and Western blot assays will be performed to assess cytokine production and other immune response markers. No live or infectious H5N1 virus will be used or generated in this work. Only the individual viral proteins (HA, NA, NS1) will be expressed separately in cell culture. All experiments will be conducted entirely in vitro.

A. Fewell gave an overview of the project, indicating that Dr. Iqbal and his lab personnel would complete DURC Training since they were using HPAI materials, even though no live or infectious virus would be used. There were no concerns raised about the project, as his lab is already approved for BSL-2 work. A small edit of Dr. Iqbal's spill protocol and an update to the BSC certification date were requested.

Items to be addressed:
1. Change "Bleach" to specific % sodium hypochlorite throughout the spill protocol.
2. Update the BSC certification date.
3. Complete DURC training.

Motion: A motion was made to approve by A. Hall. Motion was seconded by A. Fewell. Majority vote was recorded, and the protocol was approved pending minor edits.

M. Hinsdale arrives at 10:20 a.m.

3. 25-6 Kelly Harrison, "Effect of Sex-Hormones on HSV Latency and Reactivation." - Modification
Category: Biological Agent and r(s)NA
NIH Guidelines: III-D-4
Source of DNA: N/A
Vector(s): N/A

Recipient Host(s): N/A
Biosafety Level: BSL-2
Project Summary: Dr. Harris will treat mice with hormone antagonists or mice will undergo ovariectomization/castration. Following elimination of intrinsic hormone production, synthetic hormone applications will be applied. Infections with herpesviruses ocularly (HSV-1) and vaginal/penile/anally (HSV-2) will then be performed to study the direct effects of specific, singular hormones and various hormone therapies on virus latency and reactivation.

This modification submission will add two strains of transgenic mice to Dr. Harrison's protocol. No research methods have changed, other than the addition of the use of transgenic mice.

A. Fewell gave an overview of the project. There were no concerns as Dr. Harrison was already approved for BSL-2 mice work and has worked with transgenic strains in the past. However, transgenic mice work had not been approved for this specific protocol yet.

Items to be addressed:
None.

Motion: A motion was made to approve the protocol by T. Oomens. The motion was seconded by A. Fewell. Majority vote was recorded, and the protocol was approved.

4. 25-15 Liuling Yan, "Gene function in wheat."
Category: Biological Agent and r(s)NA
NIH Guidelines: III-D-5 and/or III-E-2
Source of DNA: Wheat, Medicago, Maize, Soybean, and Rice
Vector(s): Various plasmids
Recipient Host(s): *E. coli*, Yeast, *Agrobacterium*, Wheat and Tobacco
Biosafety Level: BSL-1
Project Summary: The protocol will replace Dr. Yan's expiring 15-10 BSL-1 r(s)NA protocol. No major changes in his research have occurred. In general, Dr. Yan's lab determines the function of native wheat genes or impact of model plant species (Medicago truncatula, Oryza sativa, Zea mays, Glycine max) genes in wheat. This requires sequencing of the gene of interest, transformation of wheat as well as functional protein analysis. They are particularly interested in genes related to agronomic importance, such as those conferring disease resistance or improving yield.

A. Fewell gave an overview of the project. There were no concerns as Dr. Yan's lab inspections and personnel enrollments are up to date.

Items to be addressed:
None

Motion: A motion was made to approve the protocol by T. Oomens. The motion was seconded by E. Lutter. Majority vote was recorded, and the protocol was approved.

5. 25-16 Lin Liu, "Pathogenesis and Therapy of Respiratory and Infectious Diseases."

Category: Biological Agent and r(s)NA
NIH Guidelines: III-D-1 & III-D-4 & III-D-7 & III-E-1 & III-E-3
Source of DNA: Human, *Mus musculus*
Vector(s): Various plasmids
Recipient Host(s): Human/animal cell lines, *Mus musculus*
Biosafety Level: BSL-2
Project Summary: This protocol submission will replace Dr. Liu's expiring 19-21 & 22 BSL-2 protocols. All research projects involved in this submission are on-going or previously approved. Dr. Liu's lab research is primarily focused on four major areas of lung disease, with each project utilizing adeno-viral and lentiviral vectors to overexpress or silence specific genes. Their goal is to investigate molecular mechanisms underlying disease and to develop potential diagnostic and therapeutic strategies. Their research focus includes a range of diseases, including idiopathic pulmonary fibrosis (IPF), chronic obstructive pulmonary disease (COPD), pulmonary complications caused by respiratory pathogens such as influenza virus, SARS-Cov-2 virus, respiratory syncytial virus (RSV), Streptococcus pneumoniae, Pseudomonas aeruginosa, Mycobacterium abscessus, and acute respiratory distress syndrome (ARDS).

A. Fewell gave an overview of the project. The committee requested more clarification on the specific route of transmission for each agent. As well as verifying the dates of completion of Bloodborne Pathogen Training.

Items to be addressed:
1. Specify route of transmission for each agent.
2. Confirm personnel have BBP training and include the date of completion.

Motion: A motion was made to approve by A. Hall pending minor revisions. Motion was seconded by A. Fewell. Majority vote was recorded, and the protocol was approved pending revisions.

C. Miscellaneous Business

1. BSL-3 training

- There was a discussion on allowing PIs to delegate BSL-3 training to senior lab personnel. Points of discussion were:
  - The PI is ultimately responsible, but the training could possibly be delegated.
  - Designated trainees must be approved by BSO, via a 1-page justification submitted to the Biosafety Office.
  - A PI can appeal the decision; appeal process goes to IBC.
  - Possible criteria:
    - CV
    - Experience

2. CITI Training

- OSU Biosafety specific training is now available.
- Currently the training will be strongly encouraged, eventually will be mandatory.

- Training expiration is still up for discussion (yearly/every 3 years).

3. **NIH Initiative**

   - A. Fewell described the recent NIH Initiative Announcement to the committee.

4. **IBC Annual Training**

   - A. Fewell reminded the committee to complete their annual IBC training.

Adjourn- The meeting adjourned at 11:33 a.m.