Vanderbilt University (Nashville, TN) Institutional Biosafety Committee (VU IBC)

November 11, 2025
10:45am to 11:55am
Virtual Meeting

Voting Members Present:

Name	Affiliation	Role/Expertise	Present?	Notes
Julian Hillyer	Vanderbilt University (VU)	Chair, Arthropod Containment Expert	☐ Yes ☒ No	
Jenny Schafer	VU	Scientist, Microscopist / Core Representative	☒ Yes ☐ No	Served as Chair pro tempore for this meeting
Kyle Becker	VU	Biosafety Officer	☒ Yes ☐ No	
Abigail Holloway	Metro Nashville Public Health	Non-Affiliated Community Member	☒ Yes ☐ No	
Ryan Mason	Tennessee Department of Health	Non-Affiliated Community Member	☐ Yes ☒ No	
Chin Chiang	VU	Scientist, Developmental Biologist / RDNA Delivery Expert	☒ Yes ☐ No	
Ethan Lippmann	VU	Scientist, Engineer / Drug Delivery and Stem Cell Expert	☒ Yes ☐ No	
Lisa McCawley	VU	Scientist, Biologist / RDNA and Risk Assessment Expert	☐ Yes ☒ No	
Katherine Shuster	Vanderbilt University Medical Center (VUMC)	Animal Containment Expert	☒ Yes ☐ No	
Benjamin Spiller	VU	Scientist, Structural Biologist / Microbiology and Toxin Expert	☒ Yes ☐ No	
Jeanne Wallace	VUMC	Alternate Animal Containment Expert	☐ Yes ☒ No	
William Wan	VU	Scientist, Biochemist / Molecular Biology and Virology Expert	☒ Yes ☐ No	

Non-voting members in attendance:

Name	Affiliation	Title
Andrea George	VU	Assistant Vice Chancellor, Environmental Health, Safety, and Sustainability (EHSS)
Kendra Hoffsmith	VU	Safety Officer, Biosafety, EHSS
Matt Loch	VU	Safety Officer, Biosafety, EHSS
Ryan McAllister	VU	Associate Director of Biosafety, EHSS

Selene Colon	VU	Assistant Dean for Research, Dean's Office, School of Medicine Basic Sciences
Greta Messer	VU	Associate General Counsel, Office of the General Counsel
Scott Bury	VUMC	Director of Office of Animal Welfare Assurance
Venita White	VUMC	Infectious Disease Nursing Program Manager, OHC

Quorum

Per the VU IBC Charter, at least five voting members of the IBC must be present to conduct business. Eight voting members were present; therefore, quorum was met.

Call to Order / Introductions / Announcements

This meeting was held in a virtual format that included an internet-based video meeting platform. Using this platform, review materials were shared, and attendance and voting were confirmed and recorded.

Dr. Hillyer was unable to attend this meeting, as such Dr. Schafer served as chair pro tempore.

The IBC chair called the meeting to order at 10:48 am.

The IBC chair reminded all members present to identify any conflicts of interest (COI) as each registration is reviewed. The IBC chair also reminded the IBC that the current missive of the IBC is to evaluate whether registrations comply with the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (NIHG), and that at present, the IBC does not specifically evaluate whether research constitutes dual use research of concern or gain of function research since this is the function of an Institutional Review Entity.

Minutes Review / Approval

The BSO informed the IBC of a clerical error from the August 2025 IBC meeting that resulted in the August 2025 IBC minutes reporting the incorrect IACUC protocol number for an administrative amendment. Following this explanation, the IBC voted to approve a correction of the August 2025 IBC minutes such that it includes the following statement: "A clerical error in the administrative update table originally listed IACUC protocol number: M2200070 instead of IACUC protocol number: M2200051. In the November 2025 IBC meeting, the IBC voted to amend the August 2025 IBC minutes to reflect the correct IACUC protocol number: M2200051 "

Motion to approve the August 2025 IBC minutes correction: For: 8 ; Against: 0; Abstain: 0.

The IBC Chair opened the floor for comments and proposed revisions to the minutes of the October 28, 2025 meeting. The IBC voted to approve the minutes as presented with no changes.

Motion to approve the October 2025 IBC minutes: For: 8; Against: 0; Abstain: 0.

Biosafety Officer's Incident Report

There were no incidents to report.

Biomaterials Registration Reviews

VU-BMR	Review Type	PI	Department	Title
146	Renewal	Guelcher, Scott	Chemical and Biomolecular Engineering	*Investigations in the Use of Polyurethane-Derived Biomaterial Grafts for the Aid of Bone and Soft Tissue Remodeling Processes*

Research Description (as stated by PI): Novel polyurethane-derived biomaterials are being designed to heal bone and soft tissue defects, as well as investigate healthy and diseased states of bone tissue, bone marrow, and soft tissue sites. The cellular responses to these materials, including cytotoxicity, proliferation, and differentiation, are being investigated in 2D and 3D cell culture experiments and *in vivo* grafting experiments in rodent models.

Project Overview: This renewal registration includes the administration of murine cells modified to express fluorescent markers to mouse models of bone remodeling. The migration and proliferation of the administered cells are monitored via *in vivo* imaging and *ex vivo* sectioning. Unmodified human-derived cells will be used in downstream differentiation / proliferation and microscopy experiments.

Risk Assessment and Discussion: BSL-1 practices and containment were proposed for activities involving the culturing and use of modified murine cells, including administration to animal models. ABSL-1 containment was proposed for subsequent animal maintenance. BSL-2 practices and containment were proposed for activities involving human-derived materials.

Representatives from the VU biosafety team inspected the lab as part of the risk assessment process and found that the procedures, practices, and expertise of personnel involved in this research were sufficient for the scope of work.

No questions or concerns were raised by the IBC, and the registration was approved at the biosafety levels proposed.

NIHG Activity Categories: III-D-4-a, III-F-8 / Appendix C-I

Training: Biosafety 101: Standard Microbiological Practices (all researchers), Biosafety 201: BSL-2 Principles (HDM users only), Working Safely with Human-Derived Materials (HDM users only), 2025 Biosafety Refresher for Vanderbilt Researchers (all researchers), and Know Your Responsibilities: Biomaterials Safety Standards for New Principal Investigators (PI only).

All required trainings are complete for all lab staff listed in the registration.

COI: No IBC members declared a conflict of interest.

Motion to approve registration	For: 8	Against: 0	Abstain: 0

VU-BMR	Review Type	PI	Department	Title
105 R2	Modification	Lippmann, Ethan	Chemical and Biomolecular Engineering	*Engineering and Regenerative Medicine Strategies to Model, Understand, and Treat Disease*

Research Description (as stated by PI): The Lippmann Lab combines biomolecular and biomedical engineering principles with molecular biology techniques to model, understand, and treat diseases. The lab builds models of the vascularized brain using cultured human cells and combinations of mouse and human tissue. These models are probed using recombinant DNA technology via techniques such as cloning, viral transduction, and CRISPR. We perform validation work in mouse brain slice cultures and in living mice using viral transduction. We also complement these validations using primary human tissue samples.

Project Overview: This registration modification involves two discrete projects:

1) Extracellular vesicles (EVs) will be isolated from human and mouse cell lines that were previously modified to express genes of interest (neuron differentiation genes or fluorescent markers) for administration to research animals for downstream phenotypic experiments.
2) The receipt of recombinant human alpha-synuclein pre-formed fibrils (a-syn PFFs) from an extramural collaborator outside of VU for the development of an *in vitro* neuronal cell-based assay.

Risk Assessment and Discussion: Assessment of project #1: BSL-1 practices and containment were proposed for activities involving the administration of EVs derived from modified murine cells to research animals. BSL-2 practices and containment were proposed for the administration of EVs derived from modified human cells to research animals. ABSL-1 containment was proposed for subsequent animal maintenance.

A lab inspection was not required as the work contained in this modification does not expand the scope from the last biosafety inspection performed with this lab. The IBC verified that the facilities, procedures, practices, and expertise of personnel involved in this research were sufficient for the scope of work.

No questions or concerns were raised by the IBC related to the proposed EV work, and that modification was approved at the biosafety levels proposed.

Assessment for project #2: BSL-2 containment was proposed for activities involving a-syn PFFs. During the presentation to the IBC, the BSO introduced a biosafety practices document related to the use of a-syn PFFs to the IBC with the request that the IBC provide feedback for the work requirements at a future IBC meeting. Additional discussion on this subject was tabled until a future IBC meeting to allow the PI to incorporate suggestions made by the IBC. Therefore, the IBC proceeded to entertain a motion on project #1 only.

NIHG Activity Categories: III-D-4-a

Training: Biosafety 101: Standard Microbiological Practices (all researchers), Biosafety 201: BSL-2 Principles (a-syn PFFs and HDM users only), Working Safely with Human-Derived Materials (a-syn PFFs and HDM users only), 2025 Biosafety Refresher for Vanderbilt Researchers (all researchers), and Know Your Responsibilities: Biomaterials Safety Standards for New Principal Investigators (PI only).

All required trainings are complete for all lab staff listed in the registration.

COI: Ethan Lippmann declared a conflict of interest because this is his registration, so he was excused from the discussion and voting.

Motion to approve Project 1: the modification to administer EVs to animal models	For: 7	Against: 0	Abstain: 0

VU-BMR	Review Type	PI	Department	Title
089	Modification	Locke, Andrea	Biomedical Engineering	*Locke Lab Optical Biosensing of Biospecimens*

Research Description (as stated by PI): The Locke biosensing lab uses light to characterize and detect biomolecules such as bacteria, nucleic acid, proteins, lipids, carbohydrates, and other metabolites in human-derived biofluids and tissue specimens. The lab's overarching goal is to understand and design point-of-care tools to address current clinical challenges.

Project Overview: This registration modification involves the receipt, culture, and use of double/triple auxotrophic (ΔpanCD, ΔleuCD, and ΔmetA), drug-resistant (rifampin and/or isoniazid) strains of *Mycobacterium tuberculosis* (Mtb) ($mc^2$6206, $mc^2$8242, $mc^2$8243, and $mc^2$8251) (parent strain H37Rv) to assess the ability of the lab's detection platform to detect drug-resistant pathogens. Strains will be provided to the lab from an external collaborator.

Risk Assessment and Discussion: Per the NIH Guidelines BSL-3 practices and containment are recommended for experiments involving Mtb (parent strain H37Rv).. The strains the lab is proposing to work with are double auxotrophic for leucine and pantothenate (vitamin B5), or triple auxotrophic for leucine, pantothenate, and methionine. The collaborating lab that created these strains has published peer reviewed articles demonstrating that these strains lack the infectious ability of wild-type Mtb, specifically of the parental H37Rv strain.

- Jain, P., Hsu, T., Arai, M., Biermann, K., Thaler, D. S., Nguyen, A., González, P. A., Tufariello, J. M., Kriakov, J., Chen, B., Larsen, M. H., Jacobs, W. R. (2014). Specialized transduction designed for precise high-throughput unmarked deletions in mycobacterium tuberculosis. *mBio*, *5*(3). https://doi.org/10.1128/mbio.01245-14
- Sambandamurthy, V. K., Wang, X., Chen, B., Russell, R. G., Derrick, S., Collins, F. M., Morris, S. L., Jacobs, W. R. (2002). A pantothenate auxotroph of mycobacterium tuberculosis is highly attenuated and protects mice against tuberculosis. *Nature Medicine*, *8*(10), 1171–1174. https://doi.org/10.1038/nm765
- Vilchèze, C., Copeland, J., Keiser, T. L., Weisbrod, T., Washington, J., Jain, P., Malek, A., Weinrick, B., Jacobs, W. R. (2018). Rational design of Biosafety Level 2-approved, multidrug-resistant strains of mycobacterium tuberculosis through nutrient auxotrophy. *mBio*, *9*(3). https://doi.org/10.1128/mbio.00938-18

Based on scientific literature and a risk assessment conducted alongside VU biosafety, the Locke Lab is proposing to work with these strains using BSL-2 practices and containment. This necessitates a request to be submitted to the NIH Office of Science Policy (OSP) for permission to lower containment from BSL-3 to BSL-2. The IBC may vote to approve lowering the containment from BSL-3 to BSL-2 based on the response from the NIH OSP at a future IBC meeting.
Representatives from the VU biosafety team inspected the lab as part of the risk assessment process and found that the procedures, practices, and expertise of personnel involved in this research were sufficient for the scope of work.

During the discussion, an IBC member raised a concern that there could be false positive medical surveillance if a laboratory exposure occurred and a Mtb skin test is used. A second IBC member familiar with the OHC procedure for veterinary staff indicated that the more sensitive interferon-gamma release assay has replaced the Mtb skin test, which would not yield false positive medical surveillance for Mtb. After the IBC meeting a member of OHC confirmed that the interferon-gamma release assay is the standard test for researchers working with Mtb.

Following the discussion, the IBC voted to endorse outreach to the NIH OSP to lower containment from BSL-3 to BSL-2 for these strains and work.

NIHG Activity Categories: III-D-1-b

Training: Biosafety 101: Standard Microbiological Practices (all researchers), Biosafety 201: BSL-2 Principles (Infectious Agent users only), Working Safely with Human-Derived Materials (Infectious Agent users only),

2025 Biosafety Refresher for Vanderbilt Researchers (all researchers), and Know Your Responsibilities: Biomaterials Safety Standards for New Principal Investigators (PI only). All required trainings are complete for all lab staff listed in the registration.			
COI: No IBC members declared a conflict of interest.			
Motion to endorse the containment lowering request from BSL-3 to BSL-2 for work involving the auxotrophic drug-resistant strains of *Mycobacterium tuberculosis* (parent strain H37Rv)	For: 8	Against: 0	Abstain: 0

VU-BMR	Review Type	PI	Department	Title
135	New	Meers, Chance	Biochemistry	*Molecular Mechanisms of Mobile Genetic Elements*
Research Description (as stated by PI): The Meers Lab focuses on mobile genetic elements, which are naturally occurring pieces of DNA that can move within genomes, including their biological roles and evolutionary impact. The lab studies the molecular mechanisms that determine when and where these elements move, as well as their long-term influence on genome evolution. Because many key cellular processes such as adaptive immunity, telomere maintenance, and splicing originated from mobile elements, future work will explore other host pathways shaped by them.				
Project Overview: This new biomaterials registration includes the cloning and expression of genes of interest (transposases, nucleases, and helicases) in non-pathogenic *E. coli* and *S. cerevisiae* for use in downstream genetic, biochemical, and structural studies.				
Risk Assessment and Discussion: BSL-1 practices and containment were proposed for experiments involving RDNA in non-pathogenic *E. coli* and *S. cerevisiae.* Representatives from the VU biosafety team consulted with the lab as part of the risk assessment and lab set up process and found that the procedures, practices, and expertise of personnel involved in this research were sufficient for the scope of work. VU biosafety will return to the lab within one year post-approval to review the lab spaces. No questions or concerns were raised by the IBC, and the registration was approved at the biosafety levels proposed.				
NIHG Activity Categories: III-E, III-F-8 / Appendices C-II, C-III				
Training: Biosafety 101: Standard Microbiological Practices (all researchers) and Know Your Responsibilities: Biomaterials Safety Standards for New Principal Investigators (PI only). All required trainings are complete for all lab staff listed in the registration.				
COI: No IBC members declared a conflict of interest.				
Motion to approve registration	For: 8	Against: 0	Abstain: 0	

VU-BMR	Review Type	PI	Department	Title
029	Renewal	Neuert, Gregor	Molecular Physiology and Biophysics	*Signal Transduction and Gene Regulation in Eukaryotic Cells*
Research Description (as stated by PI): Yeast strains are employed in the study of fundamental biological processes, particularly in signal transduction and gene regulation within single cells. These strains elucidate how cells perceive and respond to their environments over time, as well as how protein complexes regulate				

various stages of gene expression. Mutant strains facilitate the linking of signaling pathways, gene expression, and viability phenotypes to specific proteins. In contrast, mammalian cells are utilized to investigate analogous questions and lncRNAs within these cells. *E. coli* strains serve as repositories and replicators of modified DNA sequences, which can subsequently be introduced into yeast strains.			
Project Overview: This registration renewal includes the cloning and expression of genes involved in signal transduction and gene regulation in non-pathogenic *E. coli* and *S. cerevisiae* for use in downstream genetic, biochemical, and structural studies. This registration renewal also includes the use of unmodified human cell lines for downstream gene expression experiments.			
Risk Assessment and Discussion: BSL-1 practices and containment were proposed for experiments involving RDNA in non-pathogenic *E. coli* and *S. cerevisiae.* BSL-2 practices and containment were proposed for experiments involving human-derived materials. Representatives from the VU biosafety team inspected the lab as part of the risk assessment process and found that the procedures, practices, and expertise of personnel involved in this research were sufficient for the scope of work. No questions or concerns were raised by the IBC, and the registration was approved at the biosafety levels proposed.			
NIHG Activity Categories: III-F-8 / Appendices C-II, C-III			
Training: Biosafety 101: Standard Microbiological Practices (all researchers), Biosafety 201: BSL-2 Principles (HDM users only), Working Safely with Human-Derived Materials (HDM users only), 2025 Biosafety Refresher for Vanderbilt Researchers (all researchers), and Know Your Responsibilities: Biomaterials Safety Standards for New Principal Investigators (PI only). All required trainings are complete for all lab staff listed in the registration.			
COI: No IBC members declared a conflict of interest.			
Motion to approve registration	For: 8	Against: 0	Abstain: 0

Prior Business/Outstanding Actions

There were no biomaterials registrations with conditional approvals or outstanding actions.

Dr. McAllister provided an update regarding the submission of the NIH IBC registration roster update that designates him as the institutional BSO. The website to submit this change is currently unavailable, and hence, Kyle Becker remains as the official BSO for this meeting. The VU biosafety team will submit the NIH IBC registration roster update once the website becomes available.

Administrative Reviews

Principal Investigator	VU BMR#	Administrative Amendment Summary
Barbara Fingleton	167 R1	Space and roster update.
Andrea Page-McCaw	120 R1	Roster update.
Fiona Yull	177 R3	Space and roster update; lab confirmed activities associated with IACUC three-year review (M2200070).

Following discussion of the items on the administrative review table, the IBC voted to approve the administrative reviews as specified above.

Motion to approve the administrative reviews: For: 8; Against: 0; Abstain: 0.

New Business

The BSO reminded IBC members that the December IBC meeting will be a hybrid meeting and provided a location for those who are planning to attend in person.

The BSO discussed the dates for the 2026 IBC meetings so that Committee members could plan for the upcoming year.

Dr. McAllister proposed adjustments to the IBC Agenda. These adjustments include an approach for discussing non-NIH related topics and moving the “Prior business/Outstanding actions” section to after the “Administrative updates” section.

Public Comments

There were no public comments.

Adjournment

The Chair adjourned the meeting at 11:19am. The next meeting of the IBC will be held in person and via an internet-based video meeting platform on December 9, 2025, at 10:45 am.

List of Abbreviations

ABSL	Animal Biosafety Level
a-syn PFFs	alpha-synuclein pre-formed fibrils
BSL	Biosafety Level
BSO	Biosafety Officer
COI	Conflict of Interest
E. coli	*Escherichia coli*
EHSS	Environmental Health, Safety, and Sustainability
EV	Extracellular Vesicles
HDM	Human-Derived Materials
IACUC	Institutional Animal Care and Use Committee
IBC	Institutional Biosafety Committee
Mtb	*Mycobacterium tuberculosis*
NIH	National Institutes of Health
NIHG	NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules
OHC	Occupational Health Clinic
OSP	Office of Science Policy
PI	Principal Investigator
RDNA	Recombinant DNA
RG	Risk Group
S. cerevisiae	*Saccharomyces cerevisiae*
VU	Vanderbilt University
VUMC	Vanderbilt University Medical Center