INSTITUTIONAL BIOSAFETY COMMITTEE

MINUTES

December 12, 2025

Members Present: 8 Voting, 0 Alternate **Quorum:** 5:8 (>51%)

Name	Committee Role	Voting	Present
Yan Lu	IBC Chair Biological Safety Officer	Voting Member	Yes
Silvia Rossbach	IBC Vice Chair	Voting Member	Yes
Melinda Brakenberry	IBC Member	Voting Member	Yes
Tonia Agin	Local Non-Affiliated Member	Voting Member	Yes
Ann Berger	Local Non-Affiliated Member	Voting Member	Yes
Benjamin Koestler	IBC Member	Voting Member	Yes
Dave Huizen	Non-Affiliated Member	Voting Member	Yes
Mark Weiss	IBC Member	Voting Member	Yes
Julia Mays	Director of Research Compliance	Non-Voting Recorder	Yes

1. Review of minutes from December 6, 2024

ACTION: T. Agin moved; D. Huizen seconded; December 6, 2024, meeting minutes approved (8 in favor; 0 opposed; 0 abstained)

2. Projects – Class III-F:

Protocol ID	PI	Agent(s) in Use	Title	Purpose	Review Status	Containment	NIH Guidelines	Rationale
26WBa	Wendy Beane	Recombinant DNA/RNA Exempt E coli vector systems: One Shot TOP10 & TOP10F', and DH5alpha	Cellular Basis of Planarian Regeneration	Committee Update	Information Only	BSL-1	Exempt III-F	No change in risk assessment. Prior committee approved containment levels maintained.
26CLa	Cindy Linn	RPE-J cell line from Rattus norvegicus. ATCC # CRL-2240	Essential Genes for RPE Induced Muller Glia Proliferation (no change)	Committee Update	Information Only	BSL-2	Exempt III-F	No change in risk assessment. Prior committee approved containment levels maintained.
26SRc	Silvia Rossbach	Escherichia coli K12 strains, DH5alpha (NEB), Top10 (Invitrogen)	Microbial Communities in Petroleum-Contaminated Sediments	Committee Update	Information Only	BSL-1	Exempt III-F	No change in risk assessment. Prior committee approved containment levels maintained.

3. Renewed Projects

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26TBa	Todd Barkman	From A Jack-Of-All-Trades Arise Masters of Few: Uncovering the Evolutionary Patterns and Processes Driving Multigene Family Functional Diversification	BSL-1	III-E	Lab Safety Risk Assessment and Management
Agent(s) in Use: E. coli BL-21					
Rationale: III -E-3 was selected because the host system is E. coli B. Biosafety Level 1 was selected, because it is suitable for work involving agents of unknown or minimal potential hazard to laboratory personnel and the environment. The laboratory is separated from the general traffic patterns in the building. Work is generally conducted on open bench tops. Special containment equipment is not required or generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science. (Appendix G - III - M). Standard microbiological practices are being used for the bacterial work and include disinfection of laboratory benches and materials used. The same methods will be used for accidental spills. Transgenic bacteria are autoclaved before disposal.					
ACTION: ACTION: M. Weiss moved; B. Koestler seconded; IBC Protocol Number 26TBa approved as written (8 in favor; 0 opposed; 0 abstained)					

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26PHa	Pamela Hoppe	Molecular genetic analysis of UNC-82 kinase function in C. elegans muscle	BL-1	III-D (d)	Lab Safety Risk Assessment and Management
Agent(s) in Use: The nematode Caenorhabditis elegans, strain N2 Bristol, Risk Group 1. The E. coli strains used for cloning are DH5alpha and XL1Blue, and the strain used to feed nematodes is OP50. Recombinant protein production will be done using BL21-AI cells from lnvitrogen. Escherichia coli HT115 (DE3) is a strain that makes dsRNA from appropriate plasmids for use in RNAi experiments with worms. The auxotrophic E.coli strain MG1655bioB:kan will be used with the TurbolD experiments.					
Rationale: Section I11-D-4-a. Recombinant or synthetic nucleic acid molecules, or DNA or RNA molecules derived therefrom, from any source except for greater than two-thirds of eukaryotic viral genome may be transferred to any non-human vertebrate or any invertebrate organism and propagated under conditions of physical containment comparable to BL1 or BL1-N and appropriate to the organism under study.					
ACTION: D. Huizen moved; A. Berger seconded; IBC Protocol Number 26PHa approved with the following revisions required: Submit a separate application for Shigella, along with a BSL-2 Risk Assessment Form (Shigella is a Risk Group 2 (RG2) pathogen, and should be performed in a BSL-2 lab) (8 in favor; 0 opposed; 0 abstained) **Amendment: Revised application reviewed by the Chair and Vice Chair. Approved January 29, 2026**					

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26DHd	David Huffman	Characterization of Metalloproteins	BL-1	III-E	Lab Safety Risk Assessment and Management
Agent(s) in Use: Escherichia coli K-12 and BL21(DE3)					
Rationale: E. coli B strain host-vector system (Section 11I-F-6 and Appendix C, Section 111-F-6, Appendix C-I1) using to produce recombinant protein. BL-2 levels procedures are followed as explained in Appendix G-11-B.					
ACTION: T. Agin moved; M. Brakenberry seconded; IBC Protocol Number 26DHd approved as written (8 in favor; 0 opposed; 0 abstained)					

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26DHe	David Huffman	Enhance Metal Content of Arabidopsis	BL-1p (plant)	III-D (d)	Lab Safety Risk Assessment and Management
Agent(s) in Use: E. Coli K12 DH5-alpha, Agrobacterium tumefacians strain C58					
Rationale: E. coli B strain host-vector system (Section 11I-F-6 and Appendix C, Section I11-F-6, Appendix C-11) used to propagate vectors. Agrobacterium tumefaciens strain C58 and derivatives will be used to transfer DNA to Arabidopsis thaliana. BL1-P level procedures are followed as explained in Appendix P-11-A. Plants will be autoclaved prior to disposal. Seeds remain in plant seeds pods on transport from greenhouse to laboratory. Plants are transported on carts. Seeds are collected in laboratory after plants are dried. Extra seeds are autoclaved. Most seeds are stored in eppendorf vials that are labeled carefully. For ICP-AES analysis seeds are dissolved in nitric acid in the laboratory prior to transport to the instrument. Digestion in this way destroys all protein, DNA, RNA, and lipids, leaving metal ions free for analysis.					
ACTION: T. Agin moved; A. Berger seconded; IBC Protocol Number 26DHe approved as written (8 in favor; 0 opposed; 0 abstained)					

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26BKa	Benjamin Koestler	Environmental Regulation of Shigella Virulence	BL-2	III-D (a) RG2 (b) RG2	Lab Safety Risk Assessment and Management
Agent(s) in Use: E. coli spp. (RG1) to harbor recombinant plasmid DNA, including DH5a, S17, K12, MG1655, RM1058, and Keio strains (BW25113). These E. coli strains are all K-12 derivatives, and thus are exempt from NIH Guidelines (Appendix C-II-A) unless they contain recombinant DNA from BSL2 organisms.					

Our parent strain is Shigella flexneri 2a str 2457t (RG2). We will also be introducing plasmids to genetic mutants of the WT S. flexneri strain; we currently have a collection of 56 S. flexneri gene knockout mutants, and we will produce more to address specific hypotheses regarding the role of formate metabolism and c-di-GMP signaling. While our results will guide which genes to target for deletion, some examples could include cdiGMP phosphodiesterases such as pdeB, porin genes such as nmpC, or signal transduction systems such as cpxA.

Rationale: Will be introducing genetic constructs into Shigella, listed as RG2 in NIH Guidelines Appendix B-II-A. Although our E. coli host strains are K12 derivatives and thus exempt from NIH guidelines (Appendix C-II-A), any host (including Shigella, E. coli, or P1 phage) containing nucleic acid derived from Shigella or any other BSL2 organism will be treated as a BSL2 agent, handled and disposed of using BSL2 guidelines (Appendix G-II-B) and additional safety measures outlined in our lab safety protocol; likewise, any nucleic acid derived from these organisms will be treated as a BSL2 agent, handled and disposed of using BSL2 guidelines (Appendix G-II-B).

ACTION: ACTION: S. Rossbach moved; M. Weiss seconded; IBC Protocol Number 26BKa approved as written (7 in favor; 0 opposed; 1 abstained) B. Koestler abstained.

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26YLb	Yan Lu	Regulation of Photosynthetic Efficiency	BL-1p (plant)	III-E	Lab Safety Risk Assessment and Management

Agent(s) in Use: The Escherichia coli strains used for cloning and expression are DH5alpha, JM109 and BL21. The Saccharomyces cerevisiae strain for yeast-two-hybrid technique with membrane proteins is NMY51. The Saccharomyces cerevisiae strain for yeast-two-hybrid technique with souble proteins is EGY48(p8op-LacZ). The Agrobacterium tumefaciens strains used for transforming plants are C58C1 and GV3101 (both non-exotic). The cyanobacterium Synechocystis strain used for expression is PCC6803 (non-exotic). Non-noxious non-exotic green algal species Chlamydomonas reinhardtii will be used as the host green algal system. Non-noxious species Arabidopsis thaliana ecotype Columbia will be used as the host plant system.

Rationale: Section III-E-2-a was selected because the host plant is Arabidopsis thaliana. Arabidopsis thaliana is not noxious in the five northwest states, nor is it on the U.S. federal noxious weed list (http://invader.dbs.umt.edu/). Additionally, the plants will be grown in the laboratory (4019 Haenicke Hall) and the green house growth chambers. These plants will be discarded after they are autoclaved (45 minutes at 121°C under >15 psi). BL1-P was selected because "BL1-P is recommended for all experiments with recombinant DNA-containing plants and plant associated microorganisms not covered in Section III-E-2-b or other sections of the NIH Guidelines (Section III-E-2-a). Examples of such experiments are those involving recombinant DNA-modified plants that are not noxious weeds." The host bacterial systems include Agrobacterium tumefaciens, Synechocystis sp., and laboratory strains of Escherichia coli. The host yeast system is Saccharomyces cerevisiae. The host green algal system is Chlamydomonas reinhardtii. None of them are exotic microorganisms. Section III-E-2-a states that examples of BL1-suitable experiments include "recombinant DNA-modified non-exotic microorganisms that have no recognized potential for rapid and widespread dissemination or for serious detrimental impact on managed or natural ecosystems (e.g., Agrobacterium spp.)". Standard microbiological practices will be used for the bacterial/yeast/algae work and accidental spills. Transgenic bacteria/yeast/algae will be autoclaved (45 minutes at 121°C under >15 psi) before disposal.

ACTION: ACTION: B. Koestler moved; A. Berger seconded; IBC Protocol Number 26YLb approved as written. (7 in favor; 0 opposed; 1 abstained) Y. Lu abstained.

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26KMa		Host-Virus Interactions Underlying HCMV Infectivity	Bl-2	III-D (a) (b) RG2 (c) less than 2/3 of a genome used, no virus helper, will not enhance pathogenicity	Lab Safety Risk Assessment and Management
Agent(s) in Use: Bacteria: E. coli DH5alpha, RG1; E. coli DH10B, RG1; E. coli GS1783, RG1. Viruses: human cytomegalovirus (HCMV), herpesviridae, betaherpesvirinae, strains AD169 and TB40/E, RG2; herpes simplex virus type 1 (HSV-1), herpesviridae, alphaherpesvirinae, strain KOS, RG2. Cell lines for expression of viral products from plasmids: Human embryonic kidney (HEK) 293T (ATCC #CRL-3216), derived from human 293 (ATCC #CRL-1573), RG2; deidentified normal human dermal fibroblasts (NHDFs, ATCC #PCS-201-012), RG1.					
Rationale: HCMV is a biosafety level 2 pathogen according to Appendix B-II-D.					
ACTION: B. Koestler moved; A. Berger seconded; IBC Protocol Number 26KMa approved as written (8 in favor; 0 opposed; 0 abstained)					

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26ATa	Andrew Thompson	The Genomics of Ecological and Evolutionary Developmental Biology in Killifishes and Ricefishes	BL-1s	III-D (d) III-E	Lab Safety Risk Assessment and Management
Agent(s) in Use: Oryzias latipes: III-D-4, Experiments Involving Whole Animals, BL-1. Ophthalmolebias constanciae: III-D-4, Experiments Involving Whole Animals, BL-1. Rivulus cylindraceus: III-D-4, Experiments Involving Whole Animals, BL-1. Aplocheilus lineatus: III-D-4, Experiments Involving Whole Animals, BL-1. Nematolebias whitei: III-D-4, Experiments Involving Whole Animals, BL-1. Escherichia coli: III-E, Experiments that Require Institutional Biosafety Committee Notice Simultaneous with Initiation, BL-1.					
Rationale: III-D-4, Experiments Involving Whole Animals, BL-1. We will be integrating fluorescent reporter constructs and other genetic elements into host fish genomes (see genetic elements described below). The fish species (listed below) are small, harmless fish and the transgenes will provide no potential hazard to laboratory personnel and the environment. The laboratory does not need to be separated from other building traffic, and no containment equipment is necessary. The Principal Investigator Dr. Andrew Thompson will conduct and supervise all training necessary for experiments. No infections agents such as virus or toxins will be used, and thus the objective is stable integration of transgenes into host fish genomes. No novel mechanisms or increased transmission of a recombinant pathogen or production of undesirable traits in the host animal is possible with these experiments. Fish will not be able to escape the facility, and most species are tropical animals that cannot survive in Michigan waters. Fish and embryos cannot enter the building plumbing system because the fish flow through system does not directly connect to					

the drain. Fish will never be moved to unapproved areas. Furthermore, all dead fish, including transgenic individuals, are retained in the freezer at -20 degrees Celsius until incineration by Environmental Health and Safety (EHS).
III-E, Experiments that Require Institutional Biosafety Committee Notice Simultaneous with Initiation, BL-1.
Experiments in the Thompson Lab will also involve cloning fish genetic elements (see genetic elements described below) into Escherichia coli via commercially available plasmid vectors in order to isolate fish genetic components for experiments such as in situ hybridization. Again, the transgenes will provide no potential hazard to laboratory personnel and the environment, and it is not possible for these genetic elements to largely affect the function of E. coli or induce pathogenicity. No novel mechanisms or increased transmission of a recombinant pathogen or production of undesirable traits in the E. coli is possible with these experiments. The laboratory does not need to be separated from other building traffic and no containment equipment is necessary. The Principal Investigator Dr. Andrew Thompson will conduct and supervise all training necessary for experiments. Any bacteria cultures not stored at -80 degrees Celsius will be placed in a biohazard receptacle and autoclaved before disposal.

ACTION: M. Brakenberry moved; S. Rossbach seconded; IBC Protocol Number 26ATa approved as written (8 in favor; 0 opposed; 0 abstained)

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26SRa	Silvia Rossbach	Sinorhizobium meliloti - Alfalfa Symbiosis	BL-1p (plant)	III-D (d)	Lab Safety Risk Assessment and Management

Agent(s) in Use: Bacteria: Escherichia coli K12 strains HB101, DH5alpha, Top10; E. coli strain BL21. Sinorhizobium meliloti strains 1021, 2011 and L5-30. We are also using transposon-derived mutants of S. meliloti 2011 that carry insertions in genes of interests that were generated by Pobigaylo et al. (2006) "Construction of a large signature-tagged mini-Tn5 transposon library and its application to mutagenesis of Sinorhizobium meliloti" (App Environ Microbiol 72:4329-37) which have been sent to us. Some S. meliloti 2011utant strains are being constructed in our laboratory by gene exchange of the wild-type gene with an antibiotic resistance gene (nptII) or the use of the CRISPR-Cas system.

Rationale: Section III-E-2-a was selected, because neither Arabidopsis nor Medicago species are "noxious weeds or can interbreed with noxious weeds in the immediate geographic area". Moreover, this section specifically mentions "Rhizobium", the microorganism I am working with: "... experiments involving whole plants and recombinant or synthetic nucleic acid molecule modified non-exotic microorganisms that have no recognized potential for rapid and widespread dissemination or for serious detrimental impact on managed or natural ecosystems (e.g., Rhizobium spp. and Agrobacterium spp.)." BL1-P is recommended for these types of experiments.

ACTION: B. Koestler moved; M. Weiss seconded; IBC Protocol Number 26SRa conditional approval. The following revisions are required in the application: 1. Under Class of Covered Experiments and Containment please check "D" (7 in favor; 0 opposed; 1 abstained) S. Rossbach abstained

Amendment: ***Revised application reviewed by the Chair and Vice Chair. Approved January 8, 2026***

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26FSa	Frederick Stull	Technologically Useful Flavin-dependent Enzymes	BL-1	III-E	Lab Safety Risk Assessment and Management

Agent(s) in Use: E. coli DH5alpha and BL-21

Rationale: III -E-3 was selected because the host system is E. coli B. Biosafety Level 1 was selected, because it "is suitable for work involving agents of unknown or minimal potential hazard to laboratory personnel and the environment. The laboratory is separated from the general traffic patterns in the building. Work is generally conducted on open bench tops. Special containment equipment is not required or generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science." (Appendix G - III - M). Standard microbiological practices are being used for the bacterial work and include disinfection of laboratory benches and materials used. The same methods will be used for accidental spills. Transgenic bacteria are autoclaved before disposal.

ACTION: B. Koestler moved; M. Brakenberry seconded; IBC Protocol Number 26FSa approved as written (8 in favor; 0 opposed; 0 abstained)

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26FSb	Frederick Stull	Mechanism of a hypothiocyanous acid reductase	BL-1	III-E	Lab Safety Risk Assessment and Management

Agent(s) in Use: E. coli strains DH5alpha, BL21 and MG1655

Rationale: III -E-3 was selected because the host system is E. coli strains BL21, DH5alpha and MG1655. Biosafety Level 1 was selected, because it "is suitable for work involving agents of unknown or minimal potential hazard to laboratory personnel and the environment. The laboratory is separated from the general traffic patterns in the building. Work is generally conducted on open bench tops. Special containment equipment is not required or generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science." (Appendix G - III - M). Standard microbiological practices are being used for the bacterial work and include disinfection of laboratory benches and materials used. The same methods will be used for accidental spills. Transgenic bacteria are autoclaved before disposal.

ACTION: A.Berger moved; S. Rossbach seconded; IBC Protocol Number 26FSb conditional approval. The following revisions are required in the application: Resubmit your registration using the attached "IBC registration form (2026)," which includes the gain-of-function section. Change "III-E. Experiments that Require Institutional Biosafety Committee Notice Simultaneous with Initiation (experiments not included in III-A, III-B, III-C, III-D and III-F)" to "III-D. Experiments that Require Institutional Biosafety Committee Approval Before Initiation (see items III-D-1 through III-D-7 in the Guidelines). Check all that apply to III-D: b. "Use of other than a risk group 1 agent as a DNA source." State risk group: Select one. "Which physical

containment level applies to this proposal (Appendix G, section II in the Guidelines)?" Select the correct "BSL II" Check one: BL-1 BL-1p (plant) BL-2 BL-2p (plant). Please include the BSL II Risk Assessment Form. (8 in favor; 0 opposed; 0 abstained)

Amendment: ***PI eliminate the proposed experiments that were flagged by IBC as needing BSL2 containment procedures. Revised application reviewed by the Chair and Vice Chair. Additional revision required "Serratia is also a BSL2 agent." PI revised application to removed "Serratia." Final version reviewed by Chair and Vice Chair - Approved January 29, 2026.***

Protocol ID	PI	Title	Containment	NIH Guidelines	Training
26BTa	Brian Tripp	Engineering and Display of Enzymes and Proteins on Bacterial Flagella Fibers	BSL-2	III-D (a) RG2 (b) RG2	Lab Safety Risk Assessment and Management

Agent(s) in Use: Only prokaryotic bacterial microorganisms will be used in this research: E. coli and Salmonella enterica serovar Typhimurium LT2 (Salmonella typhimurium). Host strains to be used include: E. coli K-12 strains (exempt class) XL-1 Red, XL-1 Blue, DH5-alpha, and commonly used laboratory E. coli B strains BL21(DE3)Gold (Stratagene, La Jolla, CA), TOP10, GI724, GI826, BL23(DE3)star, BL21(DE3)pLysS, BL21(DE3)pLysE, BL21(DE3)AI (Invitrogen, Carlsbad, CA), NEB-5-alpha (New England Biolabs, Beverly, MA), C41(DE3), C43(DE3), and AVB99 containing pBirAcm, an engineered pACYC184 plasmid with an IPTG inducible birA gene to over express the biotin ligase enzyme (Avidity, Denver, CO). Three Salmonella typhimurium strains (Class III-D, risk group 2/BL-2) will also be used: SJW1103 (wild-type for flagellar-mediated motility and chemotaxis), SJW134, which has the two genes for flagellin deleted (fliC and fljB) and is therefore non-motile unless foreign flagellin genes are added via plasmid transformation, and JR501 (r-m+) which is used to convert E. coli-grown plasmids for compatibility in other Salmonella typhimurium strains. These bacterial strains will be used for host-vector plasmid production and also for bacterial protein expression.

Rationale: A. Pathogenic Risk Group 2 Salmonella Strains. The experiments covered under this registration form involve the use of several strains of the Risk Group 2 (RG2) bacterial agent, Salmonella typhimurium. Salmonella typhimurium is a known bacterial pathogen known to cause food poisoning when ingested and is widely present in the environment, sometimes associated with reptiles, birds, and amphibians. Appendix B - Table 1, p. 39 of the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (April 2024) gives the definition of Risk Group 2 (RG2) agents as "Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available." Appendix B-II-A, p. 41, of the 2024 NIH Guidelines lists Risk Group 2 (RG2) - Bacterial Agents Including Chlamydia, which includes the following statement: "--Salmonella including S. arizonae, S. choleraesuis, S. enteritidis, S. Gallinari-pullorum, S. meleagridis, S. paratyphi, A, B, C, S. typhi, S. typhimurium"
B. Non-Pathogenic E. Coli Strains. Other experiments in these recombinant DNA protocols involve the use of standard, non-pathogenic Risk Group 1 (RG1) E. coli K-12 derivative host-vector systems or E. coli B strain-vector systems in which the host does not contain conjugation proficient plasmids. These strains include DH5-alpha, and NEB-alpha, which are considered exempt from the NIH Guidelines. Section III-F-8 (p. 25) states: "Those that do not present a significant risk to health or the environment (see Section IV-C-1-b-(1)-(c), Major Actions), as determined by the NIH Director following appropriate notice and opportunity for public comment." Escherichia coli K-12 Host-Vector Systems are specifically exempted as listed in Appendix C-II of the guidelines, p. 47 (APPENDIX C. EXEMPTIONS UNDER SECTION III-F-8). Some protein expression experiments will also use commercially available non-pathogenic E. coli B strain derivatives that are also presumably classified as RG1, such as the BL21-DE3 strain and derivative strains, BL21(DE3)-Star, C41(DE3) and C43(DE3). For all cell culture conditions with E. coli, Appendix C-II. Escherichia coli K-12 Host-Vector Systems, p. 47 of the NIH Guidelines specifies the following: "For these exempt laboratory experiments, Biosafety Level (BL) 1 physical containment conditions are recommended. For large-scale fermentation experiments, the appropriate physical containment conditions need be no greater than those for the host organism unmodified by recombinant or synthetic nucleic acid molecule techniques; the Institutional Biosafety Committee can specify higher containment if deemed necessary."

C. Bacterial Cell Culture Volumes. The experimental procedures described in this protocol involve bacterial cell culture of exempt or potential RG1 E. coli K-12 and B strains and RG2 Salmonella typhimurium cells in volumes ranging from 1 ml to 5 liters. As noted in Appendix C-II-A. Exceptions of the Guidelines, p. 47, "The following categories are not exempt from the NIH Guidelines: …(iii) large-scale experiments (e.g., more than 10 liters of culture), …". Thus, the cell culture procedures in this protocol do not use volumes of cell culture that exceed more than 50% of the volumes considered to be in the category of "large-scale" by the NIH Guidelines.
ACTION: A.Berger moved; M. Weiss seconded; IBC Protocol Number 26FSb conditional approval. The following revisions are required in the application and risk assessment form: "Under Describe special procedures, protocols, or control measures that will be implemented while using the biological agent(s)" remove "Minors under the age of 18 are not allowed in this laboratory without the approval of the Biological Sciences Dept. Chair and under direct supervision by the PI or trained graduate student." In the event an exception is needed the IBC will review at that time. **Please specify location of the freezer and confirm it is secured.** **in** ***Amendment:*** ***Revised application reviewed by the Chair and Vice Chair. Additional revision required – Freezer location incorrectly identified. Final version reviewed by Chair and Vice Chair - Approved January 29, 2026.***

4. Closed Protocols

Protocol ID	PI	Title	Purpose	Review Status
25KEc	Karim Essani	Comparative Replication Of TPV Recombinants In Owl Monkey Kidney Cells In Monolayer Verus Suspension	Committee Update	Closed
25DKa	Don Kane	Zebrafish Breeding Colony	Committee Update	Closed
25YLa	Yan Lu	Regulation of the Biosynthesis of Aspartate-Derived Amino Acids	Committee Update	Closed

5. New Business

- **Changes in Membership:**
  Silvia Rossbach and Dave Huizen are resigning from the IBC effective January 1, 2026
  Benjamin Koestler has been appointed IBC Vice Chair effective January 1, 2026
  ACTION: Information only

- **Regulatory Update:**
  ACTION: Information only – IBC minutes must be posted on the university website once redacted for IP and approved by committee. NIH OSP publishes the rosters of active and registered IBCs via the IBC-Registration Management System (IBC-RMS).

ADJOURNMENT: There being no further business, the meeting adjourned at 4:14 p.m.
ACTION: D. Huizen moved; M. Weiss seconded; IBC meeting adjourned.

Respectfully submitted,

Julia A. Mays
Director Research Compliance
Western Michigan University