Illinois State University

Institutional Biosafety Committee (IBC) Meeting Minutes

Date: 11/20/2025

Location: JH 228 & Zoom

Start time: 1:07 p.m. **End time:** 2:02 p.m.

Members Present: Adam McCrary, Harmony Kiley, Tom Hammond, Amy Gilliland, Viktor Kirik, Kathy Spence

Members Absent: Riley Francis, Tom Anderson, Wolfgang Stein

Guests Present: None

Staff Present: Jessica Lowe

I. Chair Reminder- Declare Conflicts of Interest for Protocol Review

a. None

II. Review of 10/16/2025 IBC Meeting Minutes

a. Motioned to approve minutes.

Motion: AM motioned to approve, AG seconds

For: 6; **Against:** 0; **Abstain:** 0

III. Prior Business

a. NIH IBC Self-Assessment

i. Self-Assessment has been finalized. In the interest of time, this will be covered in the December IBC meeting.

ii. BSO to create summary of items and will bring to next meeting for discussion.

b. IBC-2025-0000030 – Craig Gatto

i. Informed Dr. Gatto that the use of a biosafety cabinet in SLB for tissue culture will require updating all sections of the protocol as necessary. He indicated that revisions will likely be submitted over winter break, and he will not start experimentation until he has an approved protocol.

IV. Protocol Review

a. **Full Committee Review- New Applications**

i.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000020	Mohamed Eldeeb	Biochemical and Molecular investigations of protein quality control and mitochondrial quality control	2	2	SLB

Project Overview:

No overview was provided by PI.

Risk Assessment/Discussion:

Requested change from Low to Medum due to the potential for general localized infections in immunocompromised individuals.

Training:
CITI Training certificates were not included in the protocol.

NIH Guidelines Section:
Section III-D1: This research involves the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents.

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:

- Ask PI to provide an overview.
- E. Coli is listed in protocol. In Options, please select microorganisms/PIM to include applicable section
- Vectors/Plasmids: answer DNA sequences, packaging cell lines or host organisms, tropism, sources of plasmid, and exposure info. For exposure information, use the information in the help box if needed
- Cell Lines, Tissues: Fix incorrect special characters (due to copy and paste error)
- Revise information in the exposure section to include requested information
- Facilities: Change ABSL2 Biosafety level to BSL-2
- Facilities: Specify if laminar flow hood is used or if it's just a biosafety cabinet and fume hood.
- Facilities: Check "face shield" as it is indicated as a potential form of PPE in the safety form
- Transport: Check yes for transporting biohazardous materials within the building
- Personnel: Add CITI training certifications
- Personnel: Change to yes for being compensated
- Personnel: Experience, training and qualification- please provide requested information
- Risk Assessment: Change low to medium, minor to moderate- Change final risk assessment to medium
- Safety: Please confirm with PI that no red bags are going into the trash. Use orange autoclavable bags to treat and then go to general refuse
- Safety: Change "avoid recapping" to "must not recap"
- Accidental Spill: define what the other method is

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. AM motioned to approve, AG seconds	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

ii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000032	Kyle Floyd	Regulation of Bacterial Surface Adhesion and Biofilm Formation	2	2	SLB

Project Overview:

The proposed work aims to understand the regulatory systems that control surface adhesion and biofilm formation within bacterial pathogens. The work will primarily focus on mechanisms of surface adhesion in *Vibrio cholerae* (O1 El Tor strains A1552 and C6706), the causative agent of the gastrointestinal diarrheal disease cholera. Environmental colonization of *V. cholerae* is mediated by the type IV mannose-sensitive hemagglutinin (MSHA) pilus, while host colonization is limited by the presence of the MSHA pilus. The goal of my lab is to decipher the transcriptional regulatory mechanisms that control MSHA pilus production, to either allow for colonization of the environment or host. Eventually, the lab will also examine regulation of surface adhesion within uropathogenic strains of *Escherichia coli* (UTI89) and *Klebsiella pneumoniae* (TOP52). For our studies, genes of interest will be cloned into vectors and proteins overexpressed, purified in K12 *E. coli* and characterized biochemically. Furthermore, we will create knock-out mutant strains in *V. cholerae* and uropathogenic *E. coli* by specifically deleting genes of interest. The gene deletion strains will be directly compared with their corresponding parental strains regarding their ability to colonize surfaces, form biofilms, and their motility. The gene deletion strains will also be complemented by transformation with the respective plasmid to determine whether the parental phenotype can be restored. We will also extract RNA and analyze the expression of various genes of interest via RNAseq, RT-PCR, and/or promotor-fusions

Risk Assessment/Discussion:
Low (Almost no chance of harm)

Training:
Confirm that all personnel have completed CITI Hazard Communication Training and CITI Initial Biosafety Training. PI to upload training records to protocol.

NIH Guidelines Section:
Section III-D1: This research involves the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents.

Section III-D2: This research involves the introduction of DNA from Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents into nonpathogenic prokaryotes or lower eukaryotes.

Section III-F1: This research involves synthetic nucleic acids that (1) can neither replicate nor generate nucleic acids that can replicate in any living cell (e.g., oligonucleotides or other synthetic nucleic acids that do not contain an origin of replication or contain elements known to interact with either DNA or RNA polymerase), and (2) are not designed to introduce a stable genetic modification, and (3) do not produce a toxin that is lethal for vertebrates at an LD50 of less than 100 nanograms per kilogram body weight.

Section III-F4: This research involves recombinant or synthetic nucleic acids that consist entirely of nucleic acids from a prokaryotic host, including its indigenous plasmids or viruses when propagated only in that host (or a closely related strain of the same species), or when transferred to another host by well-established physiological means.

Section III-F8: This research involves recombinant or synthetic nucleic acids that do not present a significant risk to health or the environment as determined by the NIH Director following appropriate notice and opportunity for public comment (See Appendix C).

Appendix C-II: This research involves the use of recombinant or synthetic nucleic acid molecules in Escherichia coli K-12 host-vector systems.

Occupational Health Representative review:
IACUC and EHS will follow-up with researcher to determine whether medical screening is required under the OHSP.

Additional Comments:

- NIH Guidelines: Check box III-E1; Uncheck III-F1; Uncheck III-F4, III-F8; heck Appendix C-1
- Vectors/Plasmids: Add genomic DNA targeted and the source or change to "other" and add brief description of the types of DNA (both plasmids)
- Vectors/Plasmids: Include contact information for collaborator (both plasmids)
- Infectious agents/microorganisms: Klebsiella pneumoniae- Provide detailed exposure recommendation
- Facilities: Change support rooms holding equipment to BSL1
- Facilities: SLB labs- Add eye protection to the list of PPE. Also, surgical masks were listed as optional
- Transport: Clarify what room
- Transport: Clarify the transport for autoclave
- Personnel: Upload CITI Training Certifications
- Risk Assessment: Change severity from minor to moderate. Final assessment must be changed to medium
- Risk Assessment: Provide details on engineering and administrative controls
- Safety: Check inhalation and skin/mucous membrane as possible routes of exposures
- How are soiled reusable lab coats being managed
- Strike animal rooms from protocol; This is managed by IACUC

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. AG motioned, KS seconded	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

iii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000033	Ryan Patrick	Patrick Lab IBC	1	1	SLB

Project Overview:
This project aims to investigate Petunia traits (floral color, reflectance, development) by means of transient or stable gene editing. Agrobacterium is used to introduce a plasmid carrying components of a widely used molecular biology tool based on tobacco rattle virus (TRV) to a host plant through agroinfiltration. Virus-induced gene silencing (or in this case, gene editing) is a commonly used BSL-1 practice as TRV is a plant pathogen that does not represent a risk to human health, and does not represent a risk to the environment when used in closed spaces such as growth chambers or greenhouse bays (For more information on TRV and VIGS, see https://www.nature.com/articles/nprot.2014.092). The *in planta* reconstituted virus then infects the plant and carries as cargo a gene editing system based on the Cas9-related endonuclease TnpB, which is targeted to various genes by cloned in guide RNAs. E. coli is used as a cloning system to produce plasmids with guide RNA for specific targets. The goal is to create stable transgenic lines for

edited petunia, and evaluate the effect on traits, however it has not yet been established that stable editing in this system is possible.

Risk Assessment/Discussion:
Low (Almost no chance of harm)

Training:
Confirm that all personnel have completed CITI Hazard Communication Training and CITI Initial Biosafety Training. PI to upload certifications to protocol.

NIH Guidelines Section:
Section III-E1: This research involves recombinant or synthetic nucleic acid molecules containing no more than two-thirds of the genome of any eukaryotic virus.

Section III-E2: *This research involves genetic engineering of whole plants by recombinant or synthetic nucleic acid molecule methods.*

Section III-F5: *This research involves recombinant or synthetic nucleic acids that consist entirely of nucleic acids from a eukaryotic host including chloroplasts, mitochondria, or plasmids (but excluding viruses) when propagated in that host (or closely related strain of the same species).*

Section III-F6: *This research involves recombinant or synthetic nucleic acids that consist entirely of DNA segments from different species that exchange DNA by known physiological processes, though one or more of the segments may be a synthetic equivalent.*

Section III-F8: *This research involves recombinant or synthetic nucleic acids that do not present a significant risk to health or the environment as determined by the NIH Director following appropriate notice and opportunity for public comment (See Appendix C).*

Appendix C-I: *This research involves recombinant or synthetic nucleic acid molecules that are 1) propagated and maintained in cells and 2) contain less than one-half of any eukaryotic viral genome (all viruses from a single family being considered identical).*

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:
- Change title to reflect research
- NIH Guidelines: Review the NIH section III
- Infectious Agents/Microorganisms: Identify sources of agent and applicable details
- Infectious Agents/Microorganisms: Agro infections are possible in immunocompromised humans
- Whole Plant Work: Be specific in facilities form for green house and growth chamber
- Facilities: Include growth chamber and greenhouse
- Facilities: Specify what engineering controls will be used
- Personnel: Include CITI training certifications
- Personnel: Select your role and check emergency contact. Check E. Coli as activity. Include training experience

- Safety: Include that needles will not be recapped
- Safety: Include specific waste you're autoclaving/decontaminating (plant material, soil, etc.)
- What PPE will be worn when handling chemicals? Gloves, lab coat, and safety glasses per the Facilities form (reusable equipment and liquid waste treatment sections)
- What autoclave rooms in SLB will be used?
- Accidental Spill: Change bleach solution to 30 minutes instead of 3

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. VK motioned, HK seconded	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

iv.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000035	Ben Sadd	Experimental infection of bumblebees with Nosema bombi	1	1	SLB

Project Overview:
Nosema bombi is an environmental spore-forming fungal parasite of bumblebees that is transmitted between bumblebees through contaminated material, and does not infect any other host organisms outside of bumble bees. It is not classified under a BSL or RG category, but all protocols will be carried out under RG1 and BSL1.

N. bombi spores will be extracted from infected field caught individual bumble bees using homogenization and filtration in ammonium chloride, which prevents sporulation. *N. bombi* cannot be cultured outside of the host. Stocks of *N. bombi* will be stored in a -80C freezer. Handling and proper disposal of the infected tissue and spore suspensions will follow BMLB guidelines (a copy of which is available and is part of the training of all involved personnel).

Experimental inoculation of bumblebees: Spore solutions of *N. bombi* will be added, in the Biosafety cabinet, to a sugar water solution. Isolated adult or larval bees are presented with 10ul of this solution, which they take up per os. Following uptake, these bees are returned to individual isolation chambers. After 15-21 days, bees are snap frozen, DNA extracted, and qPCR used to quantify infection intensities.

All contaminated material is sterilized before final disposal and reusable materials (e.g. individual bumble bee housing and vials) are sterilized before reuse.

Risk Assessment/Discussion:
Low (Almost no chance of harm)

Training:
All personnel have completed CITI Hazard Communication Training and CITI Initial Biosafety Training.

NIH Guidelines Section:
N/A - No work with recombinant or synthetic nucleic acid molecules

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:

- Change room in overview
- Facilities: Are safety glasses or goggles necessary for either of these locations?
- Personnel: Upload CITI training certifications
- Safety: Remove sharps precautions if sharps are not used.

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. AM motioned, KS seconded	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

b. **Amendments**

i. Full Committee Review

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000013	Wolfgang Stein	Drosophila model for studying the genetic basis of migraines	1	1	FSA

Project Overview:
We study the physiological basis for migraine. We use genetically modified fly strains for these studies. We generate mutant fruit flies (Drosophila melanogaster) using genetic crosses from commercially available transgenic flies. The resulting expression of reporter genes such as GCaMP or other fluorescent markers in neurons of the brain allows us to characterize fly brain activity using fluorescence imaging, in addition to electrophysiology. Flies will be immobilized, and neuronal tissue will be dissected for imaging. No cloning is required. In some experiments, we will use Tetrodotoxin (TTX) to block Sodium channels in brain tissues.

Risk Assessment/Discussion:
Extreme (Very high probability of severe or life-threatening consequences. Additional controls are required to prevent exposure and department and/or college-level approval is required.)

Training:
All personnel have completed CITI Hazard Communication Training and CITI Initial Biosafety Training.

NIH Guidelines Section:
Section III-D4: This research involves (1) the deliberate transfer of recombinant or synthetic nucleic acid molecules, DNA or RNA derived from recombinant or synthetic nucleic acid molecules, or recombinant or synthetic nucleic acid molecule-modified microorganisms into whole animals AND/OR (2) whole animals in which the animal's germline genome has been altered by recombinant or synthetic nucleic acid molecules (or nucleic acids derived therefrom).

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments: - Uncheck None of the below agents or toxins. ***Amendment Summary:*** *Stein added TTX and added TTX SOP*					
Motion: Motioned to approve pending minor modification AG motioned, AM seconded	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

c. **Designated Member Review**

IBC-2025-0000023 – Investigating gene expression, genome defense processes, spore killers, and mutations in Neurospora and Fusarium Fungi – Tom Hammond

Added a new E. coli plasmid from Addgene. BSL-1. Added CITI training records for all personnel. BSO reviewed and approved amendments on 10/30/2025.

d. **Member Review- Upcoming for December Full Committee Review**

i. Dahl 01B-2025
ii. Friesen 01B-2024
iii. Kirik 02B-2023

V. New Business

i. Tabled

VI. Review of Incidents

a. Tabled

VII. Inspections/Ongoing Oversight

a. Tabled

VIII. IBC Training

a. Tabled

IX. Public Comments

a. Tabled

X. Open Discussion

XI. Next Scheduled Meeting Date

a. Scheduled for Thursday, December 18th 1:00-2:00 p.m.
b. JH 228 and Zoom.

XII. Adjournment

a. The BSO (AM) moved to adjourn the meeting at 2:02 p.m.