Illinois State University

Institutional Biosafety Committee (IBC) Meeting Minutes

Date: 9/18/2025

Location: JH 228 & Zoom

Start time: 1:05 PM **End time:** 2:08 PM

Members Present: Adam McCrary, Harmony Kiley, Tom Hammond (recused at 1:55 PM), Kathy Spence, Wolfgang Stein (left at 1:55 PM), Amy Gilliland, Viktor Kirik, Riley Francis (left at 1:30 PM)

Members Absent: Tom Anderson

Guests Present: None

Staff Present: Jessica Lowe, Ashley Katz

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

a. TH will recuse himself during protocol review IBC-2025-0000023

II. Review of 8/21/2025 IBC Meeting Minutes

a. Motioned to approve minutes.

Motion: WS motioned to approve, AM seconds

For: 8; **Against:** 0; **Abstain:** 0

III. Prior Business

a. Update on autoclave indicator test strip protocol and communication
   i. AG posted instructions on the use of the test strips and logs have been updated to include a column where users can mark "accept" or "reject"

b. Fernanda Duque's draft protocol status
   i. Fernanda submitted protocol. No longer in draft status

c. NIH IBC Self-Assessment
   i. Still in progress. BSO and Chair to schedule a time to finish the Self-Assessment. When assessment is complete, BSO and Chair will be reported back to IBC. IBC will go through once finalized to implement identified best practices and updates.

IV. Protocol Review

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

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000015	Ben Sadd	Culturing and experimental infection of bumblebees with Crithidia bombi	1	1	FSA

Project Overview:

Crithidia bombi is a trypanosome gut parasite of bumblebees that is transmitted between bumblebees though contaminated material and does not infect any other host organisms beyond bees. It is not classified under a BSL or RG category, but all protocols will be carried out under RG1 and BSL1. Crithidia bombi is used for in vitro growth characterization and determination of infection outcomes in experimentally exposed bees in the laboratory.

Crithidia bombi will be cultured to be used in experimental infections in FSA. Stocks of C. bombi will be stored in a -80C freezer. Handling and proper disposal of the live cultures will follow BMBL guidelines (a copy of which is available and is part of the training of all involved personnel).

Liquid culture: Glycerol stocks (from -80C freezer) will be inoculated into sterile FB-FP media in sterile vented culture flasks (in Biosafety cabinet). These cultures will be grown in a CO2 incubator at 27C and 5% CO2.

Experimental inoculation of bumblebees: Cultured C. bombi will be added, in the Biosafety cabinet, to a sugar water solution. Individually isolated 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 7-10 days, bees are snap frozen, DNA extracted from their guts, and qPCR used to quantify infection intensities.

All contaminated material is sterilized before final disposal.

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:

- Remove the use of sharps if sharps are not being used (safety tab)
- Select what agent each personnel is working with
- Select the most applicable role per person (personnel tab)
- Replace ? marks throughout protocol where text was copied and pasted
- Fix contradicting information on liquid waste and sharps (safety tab)

Motion: Approve pending minor modifications listed above TH motioned to approve, WS seconds	For: 7	Recuse: 0	Against: 0	Abstain: 0	Absent: 2

ii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000016	Ben Sadd	Culturing and reinoculation of	1	1	FSA

		beneficial gut bacteria of bumblebees			

Project Overview:
The below listed bacteria, all BSL1, will be cultured to be used in reinoculation assays of bumblebees. Stocks of the bacteria will be stored in a -80C freezer in FSA. Handling and proper disposal of the live cultures will follow BMBL guidelines (a copy of which is available and is part of the training of all involved personnel).

Both of these bacteria are members of the natural gut microbiota of bumblebees. They are non-pathogenic and provide functional benefits to the bees.

Bacteria strains and ATCC strain #

Snodgrassella alvi BAA-2449 (+ strains isolated from bumblebees)

Gilliamella apicola BAA-2448 (+ strains isolated from bumblebees)

***Isolation from bumblebees*:** Homogenized guts of bumblebees are used for selective isolation of the two bacteria using a streak plate method on Heart Infusion Broth (HIB) 2% agar. This takes place in a biosafety cabinet, with plates grown at 10% CO2 and 35C in a CO2 incubator. DNA is extracted and 16S rRNA sequenced to confirm the identity of new isolates.

Liquid culture: Glycerol stocks (from -80C freezer) will be inoculated into sterile HIB (in a biosafety cabinet). This culture will be grown at 10% CO2 and 35C in a CO2 incubator for 3 days.

Experimental inoculation of bumblebees: Cultured bacteria will be added, in the Biosafety cabinet, to a sugar water solution. Individually isolated 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 4 days, bees are snap frozen, DNA extracted from their guts, and qPCR used to quantify establishment of the bacteria.

All contaminated material is sterilized before final disposal.

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:

- Have monthly report generated and sent to IBC for CITI Training
- Select what agent each personnel is working with
- Select the most applicable role per person (personnel tab)
- Remove the use of sharps if sharps are not being used (safety tab)
- Replace ? marks throughout protocol where text was copied and pasted
- Confirm if liquid waste is being generated. Contradicting information (safety tab)

Motion: Motioned to approve pending minor modifications TH motioned, AM seconded	For: 8	Recuse: 0	Against: 0	Abstain: 0	Absent: 1

iii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000017	Ben Sadd	Culturing non-pathogenic BSL1 bacteria for insect immune challenge/immunoassays	1	1	FSA

Project Overview:

The below listed bacteria, all BSL1, will be cultured to be used in immune assays and heat-killed for immune challenges of insects in FSA. Stocks of the bacteria will be stored in a -80C freezer. Handling and proper disposal of the live cultures will follow BMLB guidelines (a copy of which is available and is part of the training of all involved personnel). Bacteria strains and ATCC strain # Escherichia coli 23716 Arthrobacter globiformis 8010 Micrococcus luteus 4698, and Serratia marcescens 13880. Liquid culture: Glycerol stocks (from -80C freezer) will be inoculated into sterile lysogeny broth (or other appropriate media) (in biosafety cabinet). This culture will be grown overnight in a shaking incubator at 30C. Production of heat-killed samples for insect immune challenges: Above-described overnight cultures will be centrifuged, and pellets washed and resuspended in Ringer-saline solution three times. Heat-killing takes place by placing 300ul aliquots in microcentrifuge tubes of this bacterial suspension into a dry heat-block at 95C for 5minutes. Plating of a sample from each aliquot onto a 2% medium agar plate and incubating at 30C for 48hours confirms the effectiveness of the heat-killing process. Multiple aliquots, all made in one batch, are frozen at -80C. This inactivated heat-killed bacteria is subsequently used as an immune stimulant in injections of insects (bumblebees, mosquitoes, crickets). Zone of inhibition immune assay (all under biosafety cabinet or in incubator for growth): Overnight culture, as described above, is added to 1% media agar at 40C to achieve a final bacterial cell density of 10^5/ml. Using sterile-packed pipettes 6ml of this solution is distributed in 9cm diameter disposable petri dishes. After cooling, 10 2mm diameter wells are made in the plates using a disposable Pasteur pipet. Samples of insect hemolymph are added to the wells, the plates inverted and sealed in ziplock bags. These plates are incubated overnight at 30C. After 24hours the plates are examined and any clear zones indicating growth inhibition recorded, following which the plates are disposed of. All contaminated material is sterilized before final disposal.

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:

- S.m ATCC 14880 may be infectious in immunocompromised humans. Please describe signs of exposure for this agent
- Update where A.G. and M.L. agents will be used
- Select what agent each personnel is working with
- Select the most applicable role per person (personnel tab)
- Confirm if liquid waste is being generated. Contradicting information (safety tab)

Motion: Motioned to approve pending minor modifications AM motioned, AG seconded	For: 8	Recuse: 0	Against: 0	Abstain: 0	Absent: 1

iv.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000018	Ben Sadd	Experimental infection of bumblebees with Israeli Acute Paralysis Virus (IAPV)	1	1	FSA

Project Overview:
Israeli Acute Paralysis Virus (IAPV) is a viral pathogen of honeybees that has been shown to spill over into bumble bees. It does not infect any other host organisms outside of bees. It is naturally present in honeybees throughout the US, but all experiments using active IAPV particles will take place under lab containment, with sterilization of materials and samples following use. All protocols will be carried out under RG1 and BSL1. Frozen IAPV particles extracted from honeybee pupae are sourced from the University of Illinois Urbana Champaign. IAPV cannot be cultured outside of the host. Stocks of IAPV will be stored in a -80C freezer in FSA. Handling and proper disposal of the infected tissue and virus suspensions will follow BMLB guidelines (a copy of which is available in FSA and is part of the training of all involved personnel). Experimental inoculation of bumblebees: Solutions of IAPV will be added injected in the Biosafety cabinet into experimental individual bumble bees. Alternatively, per os inoculation will take place through virus particles added under the Biosafety cabinet to a sugar water solution. Isolated bees are presented with 10ul of this solution, which they take up per os. Following uptake, these bees are returned to secure individual isolation chambers. After 5-20 days, bees are snap frozen, RNA extracted, and RTqPCR used to quantify infection intensities. Honeybee viruses are not in any way dangerous to humans; therefore, general aseptic lab personal protective equipment (lab coat, safety glasses, gloves) are used to protect workers. These pathogens are naturally found with any honeybees and are therefore likely detectable anywhere with bee research (even that no involving viruses directly). However, there is still the risk of contamination. Therefore, aseptic technique is used to prevent spreading pathogens where they are

not desired. All waste is autoclaved before disposal. Virus particles are stored in a -80 freezer after purification. All contaminated material is sterilized before final disposal and reusable materials (e.g. individual bumble bee housing and vials) are sterilized (autoclaved or bleach sterilized followed by ethanol rinse) 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:

- Clarify inoculation to include injection and feeding (overview tab)
- Select what agent each personnel is working with
- Select the most applicable role per person (personnel tab)
- Replace ? marks and other formatting issues throughout protocol where text was copied and pasted
- Confirm if liquid waste is being generated. Contradicting information (safety tab)

Motion: Motioned to approve pending minor modifications TH motioned, VK seconded	For: 7	Recuse: 0	Against: 0	Abstain: 0	Absent: 2

v.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000022	L.C. Yang	Anaerobic digestion	1	1	FHS

Project Overview:
USDA project: 1) promote sustainable agriculture and foster a circular economy by recovering energy and nutrients from vegetable farm wastes; 2) improve teaching and learning capacity, and 3) further develop and get closer to commercialization of a novel anaerobic digestion technology. Experiments include anaerobic digestion of vegetable wastes. The work involves the use of digestion effluent from a wastewater treatment plant.

Iowa Soybean Association project: This project is to research the transportation of NPK in cover crop plant biomass in a mesophilic anaerobic digestion process. The work involves the use of digestion effluent from a wastewater treatment plant.

BP project: This project is to optimize conditions to maximize biogas production from anaerobic digestion of crop residues. The work involves the use of digestion effluent from a wastewater treatment plant.

The digestion effluent is reused in the lab. About 20 liters of the effluent was collected from the wastewater treatment plant many years ago. Occasionally, we collect a few liters from the plant to make up the loss. All experiments are conducted at ISU.

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 litters to liters
- Remove check from humans because they will not intentionally be exposed (infectious agents/microorganisms tab). Check N/A instead for both agents (archaea and bacteria)
- Add appropriate room as indicated in the Overview page. This area will house a digester and research activities
- Select that biohazardous material will be transported throughout building (transport/shipping tab) Describe how transportation effluent will be brought in and transported throughout the building
- Add all lab workers/grad students to personnel tab.
- Select PI role for L.C.
- Add more information in LAI box. Use the help text in the form for assistance (safety tab)
- Have SOP for centrifuge. Best practice is to wait 10 minutes prior to opening the centrifuge (safety tab). Change from 3 minutes to 10 minutes or discuss options with EHS.
- Add more details on inventory control section and what you are inventorying. Are you inventorying digestion effluent? (safety tab)
- In reusable equipment section, change glovers to gloves. (safety tab)
- Change “liquids containing hazards” to “hazardous chemicals will be stored in an appropriate container and labeled as hazardous waste” (safety tab)
- Safety section says there are no sharps being used, but sharps container is selected in the facilities section. Address to ensure consistency throughout the document.
- Solid or liquid waste treatment with autoclave section: Provide details on how solid waste will be handled and disposed of.
- In safety and accidental spill procedures, is the contact time of 4 minutes recommended by the manufacturer of the wipes you are using? (safety tab)

Motion: Motioned to approve pending minor modifications AG motioned, VK seconded	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 3

vi.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2025-0000023	Tom Hammond	Investigating gene expression, genome defense processes, spore killers, and mutations in Neurospora and Fusarium Fungi.	2	1	SLB

Project Overview:

The research goals of this project are to improve our understanding of the molecular mechanisms of spore killing in *Neurospora crassa* and *Fusarium verticillioides*, the process of Meiotic Silencing by Unpaired DNA in *N. crassa* and *F. verticillioides*, the process of heterologous gene expression in *N. crassa*, and the molecular identities of classical mutations in *N. crassa*. Neurospora fungi are found throughout the world and are not known to cause infection in healthy humans, animals, or plants. Some *Fusarium* fungi are plant pathogens, but they are not considered select agents by the United States Department of Agriculture (USDA). The only Fusarium species studied in this project will be *F. verticillioides,* which is a Biosafety Level 1 organism according to the American Type Culture Collection. The research performed in this project will involve genetically engineering *N. crassa* and *F. verticillioides* fungi to contain recombinant DNA (rDNA). The rDNA will contain a combination of naturally occurring and modified DNA sequences from *N. crassa* or *F. verticillioides*. Additionally, the rDNA may contain sequences that are commonly used in molecular biology research (e.g., sequences for fluorescent proteins, the genome editing enzyme Cas9, standard epitope tags, and resistance proteins for common antibiotics used in molecular biology research). rDNA will also be used replace natural sequences within the target fungi (e.g., rDNA will be used to delete naturally occurring sequences in the genomes of *N. crassa* and *F. verticillioides*). Mutations will also be placed in *N. crassa* and *F. verticillioides* genes to help us understand how these genes function. Synthetic variants of *N. crassa* and *F. verticillioides* genes will also be placed in *N. crassa* (but not *F. verticillioides)* towards the same goals. *N. crassa* and *F. verticillioides* wildtype and genetically modified strains will be examined with standard growth assays, crossing assays, and gene expression assays using standard macroscopic (growth rate), microscopic (cell structure), and biochemical/molecular biology techniques (characterizing DNA/RNA/protein levels).

Risk Assessment/Discussion:

Low (Almost no chance of harm)

Training:

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

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.

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: - Determined lab will be BSL 2 - In Personnel, check the PI as the emergency contact and ensure that "compensation" status is selected for each individual - Contact EHS if N95 is needing to be used (safety tab) - Use help text for LAI section (safety tab) - Ensure bleach solutions do not have a pH of 12 or more before disposing in sink (safety tab) - Reusable equipment needs more information about PPE and contact time (safety tab)					
Motion: Motioned to approve pending minor modifications AM motioned, VK seconded	For: 5	Recuse: 1	Against:	Abstain:	Absent: 3

b. **Member Review- Upcoming for October Full Committee Review**
    i. IBC-2025-0000020 – Biochemical and Molecular investigations of protein quality control and mitochondrial quality control – Mohamed Eldeeb
    ii. IBC-2025-0000012 – Investigating the evolution of communication signals and sensory systems with wild birds in Ecuador – Fernanda Duque
    iii. ? – Suzanne Nolan

V. New Business

a. None

VI. Review of Incidents

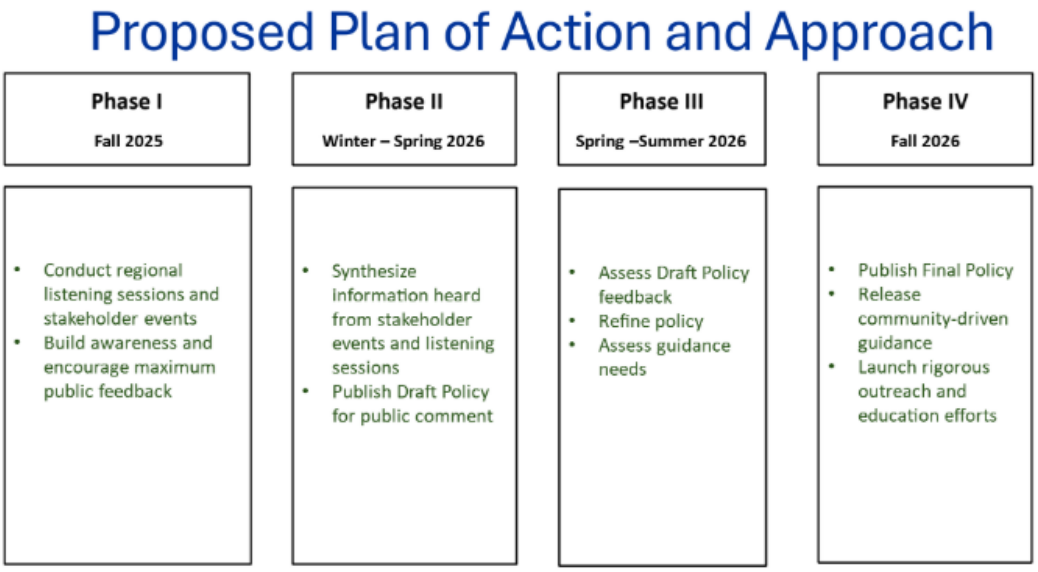
a. No incidents

VII. Inspections/Ongoing Oversight

a. Tabled

VIII. IBC Training

a. NIH Launches Initiative to Modernize and Strengthen Biosafety Oversight
    i. Email from Dr. Kathryn Harris, NIH Office of Science Policy regarding the launch of a new biosafety modernization initiative to strengthen biosafety policies, practices, and oversight to keep pace with the evolving risks posed by today's rapidly advancing science and technology. The proposed plan of action and timeline is available which includes:



IX. Public Comments

a. There were no public comments.

X. Open Discussion

a. No comments.

XI. Next Scheduled Meeting Date

a. Thursday, October 16th from 1:00-2:00pm JH 228 and Zoom

XII. Adjournment

a. The BSO (AM) moved to adjourn the meeting at 2:08pm