University of Toledo

Institutional Biosafety Committee

Date: June 16, 2025

Meeting time: 12.00 pm- 2.00 pm

Meeting type: Hybrid (Microsoft Teams and HEB 233)

Attendees/Roster:

Member	Attended	Voting	Scientific	Affiliated
DeLaSerna, Ivana	Yes	Yes	Yes	Yes
Dinardo, Robert S	No	No	Yes	Yes
Dudley, Richard	No	No	Yes	Yes
Gray, John	No	No	Yes	Yes
Kalinoski, Andrea L.	Yes	Yes	Yes	Yes
Leisner, Scott M.	Yes	Yes	Yes	Yes
Peseckis, Steven M.	Yes	Yes	Yes	Yes
Pillai, Mahesh R	Yes	Yes	Yes	Yes
Rohrs, Skylar Lee	Yes	Yes	Yes	Yes
Root, Lisa Jane	Yes	Yes	Yes	Yes
Shemshedini, Lirim	No	No	Yes	Yes
Shupp, Andrew Charles (Alt)	No	No	Yes	Yes
Taylor, Roger Travis	Yes	Yes	Yes	Yes
Wooten, Ronald Mark	Yes	Yes	Yes	Yes
Guests: Adam J. Motycka (Office of Legal Affairs)				
IBC staff: Dissanayake, Ravindika, Ph.D.				

Quorum:

Present

The IBC has (13) voting members, and (7) members are required to conduct business.

Call to Order: The IBC Chair called the meeting to order at 12.04 pm

Review and approval of previous minutes:

- Date of the meeting minutes to be approved. May 15, 2025
- Discussion: No discussion
- Motion: To approve the minutes as written
- Votes: For/Against/Abstain: 9/0/0

Review of Prior Business/Biosafety officers report:

- The committee discussed the new NIH guidelines on posting IBC meeting minutes on Institutional website. The committee reviewed a draft minute template and discussed concerns regarding the publication of sensitive information on a public platform. Mr. Adam Motycka from the Office of Legal Services was present and addressed the members' questions and concerns about redacting sensitive content from the minutes. He also agreed to assist the IBC office in reviewing the minutes prior to posting them on the website.

[Mr. Adam Motycka left the meeting at 12.31 PM, total voting members 9, quorum was maintained]

- A PI has requested bio safety level of Microcystin to be downgraded to BSL-1 after the toxin has been administered to animals. This was briefly discussed during the last meeting. The committee followed up on this again and reviewed the PI's justification for the re-classification. The committee had the following follow-up questions for the research team before making a final decision:
    - When exposed via aerosol, is there any information on how much of the agent might coat the fur around the nose/head, and how long it would remain there?
    - If there are multiple exposures, such as daily exposures over many days, would the amount of the agent in the bedding accumulate over time to toxic levels?
    - Based on the answer to #1 and 2, if there are multiple exposures over time, the animals will need to remain at BSL2 until after the final exposure.
    - If we were to treat this like a chemical hazard, we would typically wait 7 days after the final exposure before changing the cage and then move to BSL1. Do you have any data suggesting whether less than 7 days would be sufficient, depending on the half-life of the toxin remaining on the mice?

- Dr. Dissanayake informed the committee about an external IBC meeting scheduled for June 18,2025 to review PIVOT-006 clinical trial. Dr. Wooten and Mr. Rohrs agreed to attend this meeting as well.
- Mr. Rohrs updated the committee [redacted].

[Dr. Wooten left the meeting at 1.01 PM due to COI, total voting members 8, quorum was maintained]

Protocol Review

IBC #500180 – New submission – Second Full Committee review	**P.I.:** Dr. Mark Wooten	**Training:** IBC Biosafety Training and IBC Laboratory Safety Training	**Biosafety Level Assignment:** BSL-2

Title: Effects of Early Life Host-pathogen Interactions on Tissue Homeostasis

Project Overview:

The PI plans to develop a neonatal mouse model of acute and persistent infection to define developmental-related aspects of T cell immunity. The goal of this research is to answer why individuals early in life are more susceptible to specific infections compared to adults and the long-term implications of being exposed to these infections. The study involves infecting mice with Murine Cytomegalovirus (MCMV) virus and collecting blood and tissues for downstream analysis. The protocol also lists the usage of different murine and human cell lines. This work occurs under BSL2 conditions and animals will be housed at BSL2 in an approved animal facility with strict adherence to protocols.

NIH Guideline Section

Not applicable. Recombinant and Synthetic DNA are not involved

Risk Assessment and Discussion

Types of biological hazards associated with this protocol are as follows,

1. Viruses: Murine Cytomegalovirus (Smith, K181, gB, GFP, Luciferase strains)
2. Animal Tissues: Isolated from mice from DLAR (uninfected and MCMV infected tissues, lung, liver, spleen, lymph node, heart, intestines, salivary gland, brain, blood)
3. Human Tissues: Donor tissue provided by National Disease Research Interchange and Human Tissue and Organ Research Resource (Heart, lymph node, brain, spleen).
4. Mouse Cell lines: M2-10B4 (immortalized fibroblast mouse cell line), RAW 264.7 (immortalized mouse macrophage cell line)
5. Human Cell lines: THP-1 (immortalized human monocytic cell line), Jurkat Clone E6-1 (immortalized human T cell line)

Hazards of working with human cells/tissues could include the presence of pathogens capable of infecting personnel. Thus, all such works will be performed at BSL2-level precautions, as outlined in Appendix H in the BMBL 6th ed.
Potential sources of risk are through aerosols, needle sticks, disposal of biohazardous animal carcasses, or other accidental causes. The committee discussed the proposed precautions outlined in

the protocol such as PPE requirements, waste disposal procedures, handling of aerosol generating equipment, safe handling and disposal of sharps and determined that the proposed precautions are appropriate and sufficient.

Occupational Health Representative review (if applicable):

N/A

IBC vote:

A member made a motion for 'Modifications required for approval, then Designated Member Review (Vice Chair Only)'. Another member seconded. The required modifications were:

1. Add DLAR and Ultracentrifuge rooms to relevant sections.
2. Add a statement about not receiving the UToledo Spill Kit yet.
3. Add blood and tissues collected according to the IRB protocol
4. Add Appendix H of the BMBL guideline to the Human/Animal Tissues and Cell Lines Risk Assessment Section.

Total Votes: 8, For: 8, Against: 0, Abstain: 0

[Dr. Wooten returned at 1.06 PM, total voting members 9, quorum was maintained]

IBC #108631 – Renewal	**P.I.:** Dr. Dragan Isailovic	**Training:** IBC Biosafety Training and IBC Laboratory Safety Training	**Biosafety Level Assignment:** BSL-2

Title: Method Development for Detecting Microcystin Toxins in Biological Samples

Project Overview:

The research team have previously developed liquid chromatography-mass spectrometry (LC-MS) methods for quantification of microcystin (MC) congeners in aqueous solutions, water collected during harmful algal blooms (HABs) (Palagama et al. 2017; Baliu-Rodriguez et al. 2022), biological fluids (Palagama et al. 2018), and liver tissues (Baliu-Rodriguez et al. 2021). They are planning to continue:

1. developing and refining rigorous, instrumental methods for determining major hepatotoxic microcystins along with their metabolites in cyanobacterial samples, biological fluids, and tissues,
2. Applying those methods in collaborative projects involving their degradation and the development of the filters for removal of MCs and other cyanotoxins from water.

Ultrahigh-pressure liquid chromatography-tandem mass spectrometry (UHPLC-MS/MS), UV-Vis, and fluorescence-based methods will be used to assay MC, anabaenopeptins (APs) and cyanopeptolins (CPs) congeners, and to quantify [redacted] cyanobacterial metabolites [redacted]

[redacted] that may appear during harmful algal blooms (HABs) in the Lake Erie and Grand Lake St. Mary's. [redacted]

NIH Guideline Section

Not applicable. Recombinant and Synthetic DNA are not involved

Risk Assessment and Discussion

Microcystin toxins are potent inhibitors of liver protein phosphatases type 1 and 2A. They can cause massive hepatic hemorrhage and death. MCs are also irritants to skin and mucous membranes. Fume hood will be used for activities with high aerosol potential, such as cyanobacterial cell lysis and sample preparation by solid-phase extraction. The use of the fume hood is also required for the preparation of standard solutions of powder standard samples of cyanotoxins purchased from Enzo Biosciences (Farmingdale, NY) or Cayman Chemicals (Ann Arbor, MI). Personnel are required to wear lab coats, impermeable disposable gloves, and safety goggles when working with solutions containing MCLR. Same PPE will be used for all other cyanometabolites analyzed. Any glass vials and bottles will be handled with care to avoid accidental cuts in the case of breakage.

Occupational Health Representative review (if applicable):

Please clarify the purpose of the listed rooms. These are storage only rooms. If experiments are conducted here, they should be inspected by the bio safety officer.

IBC vote:

A member made a motion for 'Modifications required for approval, then Designated Member Review (Vice Chair Only)'. Another member seconded. The required modifications were:

1. Add more details on the new experiments
2. Update training for the study personnel
3. Explain how needles are being used and discarded
4. Complete the Non-Cellular Biohazards - Biological Nanoparticles and Biotoxins section.
5. When preparing standard samples (high concentration) and high chance of aerosols - use of the fume hood is required (not just recommended)

Total Votes: 9, For:9, Against: 0, Abstain: 0

IBC #500027 – Renewal	**P.I.:** Dr. Nagalakshmi Nadiminty	**Training:** IBC Biosafety Training and IBC Laboratory Safety Training	**Biosafety Level Assignment:** BSL-2

Title: Tumor metabolism as the Achilles' heel in prostate cancer

Project Overview:

The PI is studying the inhibition of monocarboxylate transporters (MCTs) as viable strategy to overcome Prostate cancer therapy resistance. They propose 3 specific aims to test this hypothesis.

1. Aim 1: To undertake a comprehensive characterization of the effects of MCT inhibitors either singly or in combination with enzalutamide using a panel of therapy resistant prostate cancer cell lines. These results will be confirmed using inhibition of MCT expression.
2. Aim 2: To assess the ability of MCT inhibitors to suppress the tumor growth of therapy-resistant prostate cancer cells and patient-derived tissues in mice.
3. Aim 3: To explore the mechanisms involved in the effects seen with MCT inhibitors.

The PI is planning to inject prostate cancer cells into mice and treat them with vehicle (0.5% Methocel A4M) or MCT inhibitors for 3-5 weeks. The inhibitors are obtained through commercial vendors. Tumor growth in animals will be monitored, and blood and tissues will be harvested for further analysis. Also, Cells treated with these MCT inhibitors or cells overexpressing MCTs, or cells expressing shRNAs against MCTs, or xenograft tumor tissues treated with MCT inhibitors will be analyzed for their total protein and RNA content. All these experiments will be handled with BSL2 precautions.

NIH Guideline Section

Section II-A-1; Section III-D-2; Appendix B-II-A

Risk Assessment and Discussion

Biological hazards that are associated with this protocol are as follows,

1. Human prostate cancer cell lines
2. SCID mice.
3. Human prostate cancer tissues.
4. MCT1, MCT2, MCT4-expressing plasmids in pCDNA3.1.
5. Commercially available MCT inhibitors.

Potential sources of risk are through aerosols, needle sticks, potential chemical or tissue spills in the lab, or other accidental causes. All necessary precautions will be used by personnel, who will be trained in lab safety and biosafety prior to engaging in research activities. All potential aerosol-generating procedures will be carried out in biosafety cabinets. Hand washing facilities and puncture-resistant sharps containers will be available in the laboratory. Personal protective equipment including gloves, goggles, lab coats, face shields, face masks etc. will be available and will be used as needed by the personnel.

Occupational Health Representative review (if applicable):

N/A

IBC vote:

A member made a motion for 'Modifications required for approval, then Designated Member Review (Chair Only)'. Another member seconded. The required modifications were:

1. Add Histology core room and SOP for transportation of specimen to Core Facilities.

Total Votes: 9, For:9, Against: 0, Abstain: 0

IBC #500053 – Renewal	**P.I.:** Dr. Shin-Yi Marzano	**Training:** IBC Biosafety Training and IBC Laboratory Safety Training	**Biosafety Level Assignment:** BSL-2

Title: Developing gemycircularvirus-based pesticide for the control of Sclerotiniaceae fungi

Project Overview:

The PI proposes to optimize the formulation of Genomoviruses-containing bioinoculants or developing new bacterial bioinoculants that attenuates fungal virulence, and to develop novel gene-silencing strategies for the delivery of new biopesticides. They propose to test the infectivity of SlaGemV-1-containing inoculants on inducing resistance against Neopestalotopsis spp, Fusarium spp. and Tomato brown rugous fruit virus. Additionally, they will also test RNAi to control these same plant pathogens.

NIH Guideline Section

Section III-D-5, Appendix B

Risk Assessment and Discussion

The protocol is associated with the following biological agents.

1. Infectious clones of SlaGemV-1, SsHADV-1, and FgGMTV1 which are mycoviruses. The infectious clones are inserted into vectors and transfected into fungal protoplasts. Afterwards, the viruses are replicating in the fungal cells.
2. pCambia vectors expressing viral infectious clone, viral CP, Rep, and plant defensin proteins in N. benthamiana
3. pOGG vectors expressing viral infectious clone, viral CP, and Rep proteins in S. sclerotiorum
4. Mutant cultures of Botrytis cinerea and Sclerotinia sclerotiorum site-specific gene displacement mutants expressing viral CP and Rep proteins
5. Mutant cultures of Sclerotinia sclerotiorum ectopic expression mutants of viral CP and Rep proteins
6. GFP-expression reporter strain of S. sclerotiorum

General precautions for handling the plant pathogens are required and the SOP attached has been approved by USDA-APHIS. Annually certified biosafety hood will be used. SOP attached but these are not human pathogens or blood-borne pathogens.
Occupational Health Representative review (if applicable): Lab should be inspected and meet requirements for BL2-P.
IBC vote: A member made a motion for 'Modifications required for approval, then Designated Member Review (Chair, Primary and Secondary Reviewer)'. Another member seconded. The required modifications were: 1. Define terms 2. Clarify which experiments will be performed in cell culture, which in the growth chamber, and which in greenhouse 3. Must describe containment of the transgenic tomatoes that they will be making in Objective 5 part 3. 4. Must include a discussion of the work they will be doing on Defensins. 5. Describe if samples are fixed prior to transport to the HSC for TEM 6. Add the GFP-expressing reporter strain of S. sclerotiorum to the list of hazards 7. What are the single genes from Sclerotinia sp.? 8. Add T444T vector, agrobacterium and HT115 to relevant sections. 9. Include information about containment for transgenic plants 10. The PI indicates that they will generate transgenic tomatoes, so it is unclear where the Arabidopsis comes from. It is assumed that the PI is using Nicotiana benthamiana as an expression system, but that should be explained Total Votes: 9, For:9, Against: 0, Abstain: 0

New Business/Additional Topics: none

Review of incidents: none

Inspections/Ongoing oversight: none

IBC training for members: none

Public comments: none

Adjournment: The IBC Chair moved to adjourn the meeting at 1.44 PM.
The next meeting scheduled is for July 17, 2025 at 12.00 PM via MS Teams and in-person (HEB 233).