

MINUTES OF THE  
INSTITUTIONAL BIOSAFETY COMMITTEE MEETING  
Southern Illinois University Carbondale  
In-person at Woody Hall Conference Room 355  
November 20, 2025  
2:00pm-3:30pm

**IBC Members Present**

1. Derek Fisher (IBC Chair; gene drive modified organism expert)
2. Andrew Wood (BSO; plant containment expert)
3. Jennifer Harris (Animal containment expert)
4. Ami Ruffing (Environmental health and lab safety expert)
5. Sarah Kroenlein (Research Compliance)
6. Jacob Nordman (Human gene transfer expert; animal containment expert)
7. Judy Davie (Human gene transfer expert; animal containment expert)
8. Jose Franco Da Cunha Leme Filho (Plant containment expert)
9. Lahiru Jayakody (Gene drive modified organism expert)
10. Sarah Patrick (Local non-affiliated member, public health expert)

**Other Individuals in Attendance**

11. Rachel Swetz, IACUC Coordinator, Office of Research Compliance (serving as minute taker)

**CALL TO ORDER AND OPENING REMARKS**

Dr. Fisher (Chairperson) called the meeting to order at 2:00PM with a quorum present. The IBC has 11 voting members, and 6 members are required to conduct business.

**APPROVAL OF OCTOBER MEETING MINUTES**

Dr. Fisher opened the floor for discussion of the October 2025 minutes.

**[Dr. Nordman entered the meeting at 2:05PM]**

Dr. Harris moved to approve the minutes, and Dr. Fisher seconded the motion.

Total voting: 9    Approve: 9    Oppose: 0    Abstain: 1

**ACTIVITY REPORT**

Dr. Fisher went over the MUAs that were approved during the last month.

**INCIDENT REVIEW**

None to report.

**REVIEW OF MUAs, RENEWALS, AND AMENDMENTS**

MUA#25-002 – *NGS Workflow at BiotechCore (BioLaunch)*, submitted by Dr. Lahiru Jayakody.  
Applicable NIH Guidelines: Section III-F

Dr. Fisher summarized the MUA request. The purpose of this MUA is to establish next generation sequencing (NGS) workflow at the Biotechnology Core (BioLaunch). The laboratory will only accept BSL-1 organisms and DNA or RNA samples from cell-free or deactivated cells for NGS analysis. Health surveillance is not necessary.

Access to the laboratory is restricted to authorized, trained personnel. All personnel are trained on routine hygiene for the laboratory, the Biosafety Manual, and laboratory-specific SOPs before beginning work. Centrifuges will use sealed centrifuge cups or rotors when spinning biohazardous materials to prevent aerosol generation. Once the autoclave is operational, another MUA will be submitted for BSL-2 work.

The committee provided general reflections and noted that the autoclave is not yet operational at this time.

Dr. Fisher moved to approve MUA#25-002, and Dr. Patrick seconded the motion.

Total voting: 9    Approve: 9    Oppose: 0    Abstain: 0

Conflict of Interest: Dr. Lahiru Jayakody did not participate in the vote for MUA#25-002.

MUA#25-003 – *Efficacy and Scale-up of Engineered Phages to Mitigate Microcystis aeruginosa Harmful Algal Bloom Production of Microcystin Toxin (Nondna)*, submitted by Dr. Lahiru Jayakody.  
Applicable NIH Guidelines: Section III-D-1-a

Dr. Fisher summarized the MUA request. The purpose of this project is to develop a novel approach to control *M. aeruginosa* using an engineered bacteriophage as a specific molecular vehicle to inhibit microcystin toxin production. The laboratory will create cocktails of engineered T7 phage (non-pathogenic) to target *M. aeruginosa*, then test the effectiveness of the engineered phages using ASO and in situ microcystin-LR degradation.

*M. aeruginosa* is a cyanobacterium classified by the CDC as a harmful algal toxin. It is recognized as a potent liver toxin, and possible human carcinogen (IARC group 2B). However, the microcystin-LR toxin produced by the *M. aeruginosa* in this study will be deactivated, therefore health surveillance is not necessary. Researchers will use proper PEP to avoid ingestion or skin contact, and all materials will be handled in the BSL-2 laboratory following standard guidelines.

All personnel will use proper PPE, undergo appropriate training, and will be provided with the location of eye-wash fountains and emergency showers in case of accidental contact.

The committee provided general reflections and noted that the MUA request does include training of researchers with respect to *M. aeruginosa*.

Dr. Fisher moved to approve MUA#25-003, and Dr. Nordman seconded the motion.

Total voting: 9    Approve: 9    Oppose: 0    Abstain: 0

Conflict of Interest: Dr. Lahiru Jayakody did not participate in the vote for MUA#25-003.

MUA#25-004 – *Efficacy and Scale-up of Engineered Phages to Mitigate Microcystis aeruginosa Harmful Algal Bloom Production of Microcystin Toxin (s/rNA)*, submitted by Dr. Lahiru Jayakody.  
Applicable NIH Guidelines: Section III-D-1-a

Dr. Fisher summarized the MUA request. Non-pathogenic T7 bacterial phage genome and non-pathogenic cyanophage tail proteins will be integrated to develop a novel T7 phage designed to target *M. aeruginosa*. Yeast artificial chromosomal plasmids will be used to clone the T7 genome. Manipulations will be conducted in the host organism *Saccharomyces cerevisiae* (BSL1). To incorporate the antisense mRNA fragment, vector plasmid pBTL-2 will be used and modified to include the T7 packaging signal and a tracking component, such as a GFP plasmid. All plasmids and genetic elements utilized are non-pathogenic. The cloning process will be performed in *E. coli* 5α Iq cells (BSL1). Non-pathogenic BSL-1 organisms include algae, bacteria, and cyanophages such as *Saccharomyces cerevisiae*, *E. coli*, *Chlorella*, *Selenastrum*, and *Scenedesmus*.

Most DNA manipulations will be conducted in a certified BSL-2 biosafety cabinet following proper SOPs and PEPs. All personnel will be trained on the SOPs, and the PI will frequently monitor the laboratory and maintain records related to *M. aeruginosa*. Due to established protocols for handling the organism and toxin, health surveillance is not necessary.

The committee noted that that the toxin used in this MUA would require high doses to be harmful and the BSL-2 requirements are sufficient for this work.

Dr. Fisher moved to approve MUA#25-004, and Dr. Nordman seconded the motion.

Total voting: 9    Approve: 9    Oppose: 0    Abstain: 0

Conflict of Interest: Dr. Lahiru Jayakody did not participate in the vote for MUA#25-004.

MUA#25-005 – *Transmission of Microbial Lineages Between Vertebrate Hosts*, submitted by Dr. Iris Holmes.

Applicable NIH Guidelines: Section III-F

Dr. Fisher summarized the MUA request. The work includes capturing animals in the field, taking tissue samples, and inactivating those samples in a storage buffer. Tissue samples include muscle, blood, cloacal and rectal swabs, buccal swabs, fecal samples, and solid organ samples. The PI will also collect soil samples. DNA/RNA Shield will be used as a storage buffer for all sample types, then DNA and RNA will be extracted from the inactivated samples in the laboratory.

Species that could be sampled include wild rodents and other small mammals, bats, frogs, salamanders, snakes, and lizards. Potential hazards could include anaplasmosis, babesiosis, chagas disease, ehrlichiosis, bunyavirus, histoplasmosis, leptospirosis, Lyme disease, rabies, tularemia, flaviviruses, alphaviruses, leishmaniasis, and malaria. Personnel are required to take the Introduction to Biosafety, Animal Biosafety, and OSHA Bloodborne Pathogens courses through CITI. Personnel will follow BSL-2 containment procedures and will be trained by the PI on the early symptoms of all potential or known hazards.

The committee noted that some of the potential agents would be considered BSL-3 if they were propagated in the laboratory. However, this work is being done in the field with samples immediately inactivated in storage buffer, therefore BSL-2 is appropriate. The committee also noted that Dr. Holmes has submitted an IACUC protocol for the animal activities described in this MUA.

Dr. Fisher moved to approve MUA#25-005, and Dr. Jayakody seconded the motion.

Total voting: 10    Approve: 10    Oppose: 0    Abstain: 0

Conflict of Interest: None.

MUA#25-006 – *Biosensors and Methods for Rapid Bacteremia Diagnostics*, submitted by Dr. Hui Li.  
Applicable NIH Guidelines: Section III-F

Dr. Wood summarized the MUA request. The purpose of the MUA is to use human whole blood to perform rapid bacterial detection and antibiotic susceptibility testing using biomedical micro electrical mechanical systems (Bio-MEMS). All human whole blood and contaminated materials will be handled using BSL-2 practices with full PPE. Potential pathogens include HBV, HCV, and HIV. Potential exposure routes include needlestick or sharps injury, splashes to mucous membranes, contact with non-intact skin, or aerosols generated during manipulation.

All human whole blood samples will be centrifuged in a clinical centrifuge using biosafety sealed centrifuge buckets. Buckets will be opened in the biosafety cabinet to retrieve samples prior to decontamination and disposal.

Health surveillance will be maintained for all laboratory personnel handling human whole blood. All staff will be informed of human bloodborne pathogen risks and advised to disclose any condition that may compromise immunity. Personnel will be enrolled in the SIUC occupational health program, which includes bloodborne pathogen training, hepatitis B vaccination, and access to post-exposure medical evaluation.

Personnel are required to complete the Chemical and Biological Safety Training offered by SIUC, and CITI courses including Initial Biosafety Training, Introduction to Biosafety, Bloodborne Pathogens, and Responsible Conduct of Research.

The committee noted that Dr. Li does not have BSL-2 equipment in his laboratory so he will use Dr. Fisher's laboratory equipment. Dr. Fisher is only providing space and training on the centrifuge but is not participating in analysis. The committee discussed whether a mode of safe transport between laboratories has been established. Because there is no campus-wide SOP to establish transportation of BSL-2 materials between laboratories, this language must be included in the MUA. The committee also requested to know if Dr. Li has previously done pilot work in his laboratory.

Dr. Patrick moved to request revisions from the PI and have the revised MUA evaluated by the BSO and designated Chairperson. Dr. Leme seconded the motion.

Total voting: 9    Approve: 9    Oppose: 0    Abstain: 0

Conflict of Interest: Dr. Derek Fisher did not participate in the vote for MUA#25-006.

### **DISCUSSION OF PROPOSED IBC POLICIES**

- Policy 220 – Chair Responsibilities

Dr. Fisher introduced the policy to the committee. The committee edited the policy to state that the Chairperson appointment would be for three years, rather than five, with an option to reappoint.

Dr. Patrick moved to approve the revised policy, and Dr. Leme seconded the motion.

Total voting: 10 Approve: 10 Oppose: 0 Abstain: 0

- Policy 230 – BSO Responsibilities

Dr. Fisher introduced the policy to the committee. Dr. Wood provided a summary of the BSO's responsibilities as mandated by the NIH and described in the policy.

Dr. Fisher moved to approve the policy, and Dr. Nordman seconded the motion.

Total voting: 10 Approve: 10 Oppose: 0 Abstain: 0

- Policy 320 – MUA Submission and Review

Dr. Fisher introduced the policy to the committee. The purpose of the policy is to outline review types and procedures for MUAs and amendments. The committee noted the flexibility to review eligible requests administratively or through Chair Review.

Dr. Fisher moved to approve the policy, and Dr. Nordman seconded the motion.

Total voting: 10 Approve: 10 Oppose: 0 Abstain: 0

### **PUBLIC COMMENTS**

There were no public comments.

### **ANNOUNCEMENTS**

The IBC Chairperson moved to adjourn the meeting at 2:53PM. The next meeting is scheduled for December 18, 2025, at 2pm in Woody Hall conference room 355, but will be cancelled if no MUAs are scheduled for review. If cancelled, the next meeting will be on January 15, 2025, at 2pm in Woody Hall conference room 355.