Marquette University
Office of Research Compliance
Institutional Biosafety Committee

MINUTES

IBC Member Roster: Austin Fritsch (Voting Contact), Dennis Daye (Member), Michael Schlappi (Plant Expert), Murray Blackmore (Chair, Animal Expert), Edward M. Blumenthal (Member, Vice Chair), M. Behnam Ghasemzadeh (Animal Expert), Jason M. Keaton (Biosafety Officer), Allison E. Reeme (Member), Jerome Donohoe (Non-Affiliated), Eli Colina (Non-Affiliated), Rebecca A. Seevers (Non-Affiliated)

Present: Austin Fritsch (Voting Contact), Dennis Daye (Member), Michael Schlappi (Plant Expert), Murray Blackmore (Chair, Animal Expert), Edward M. Blumenthal (Member, Vice Chair), M. Behnam Ghasemzadeh (Animal Expert), Jason M. Keaton (Biosafety Officer), Allison E. Reeme (Member), Jerome Donohoe (Non-Affiliated), Eli Colina (Non-Affiliated), Rebecca A. Seevers (Non-Affiliated)

Absent: N/A

Guests: Dr. Chris Marshall

I. **MEETING DATE:** September 11th, 2025
II. **MEETING TYPE:** In-Person
III. **MEETING STATUS:** Open
IV. **QUORUM:** Present
V. **CALL TO ORDER:** 12:00 PM
VI. **CONFLICT OF INTEREST:** No conflicts of interest were observed.
VII. **ANNOUNCEMENTS:** N/A
VIII. **REVIEW MEETING MINUTES**
- **A.** July 22, 2025 Meeting Minutes
  - **i.** Requested Revisions: The committee requested the re-wording of a recommendation to clarify the committee's expectations.
  - **ii.** Motion to approve the minutes as revised.
    - Approve: 9, Deny: 0, Abstain: 2

IX. **NEW PROTOCOL(S)**
- **A.** N/A

X. **THREE YEAR RENEWAL(S)**
- **A.** Paul Gasser, BISC; #5107: "Tools for monitoring intracellular signaling in cultured cells"
  - **i.** Project Overview:

IBC Approval Date: 11/12/25
Date Posted: 11/20/25

- The proposed work consists of transforming non-pathogenic E. coli with plasmids to obtain purified stocks of said plasmids, as well as transfecting recombinant bacterial plasmids into astrocytes cultured from postnatal mouse or rat brain tissue and into human glioma cells. The utilized plasmids contain nucleic acid sequences for E. coli, the human genome, as well as a variety of other synthetic and non-synthetic sources, and encode recombinant forms of human cellular signaling proteins fused with fluorescent proteins. These plasmids are used to obtain expression of recombinant human genes in cultured cells. The proteins that are produced as a result of the manipulation play roles in cellular signaling in the host cells and allow for the tracking of the activity and location of the signaling proteins. The strain of E. coli (DH5α) to be used in growing plasmid stocks is not known to cause disease in healthy adult humans, and has a long history of safe use in laboratory and industrial applications (e.g. production of human insulin for pharmaceutical use). The environmental stability of the utilized plasmids is limited in the environment. For these reasons, the proposed work will be carried out at BSL1 using standard biological practices.

ii. Discussion:

- Training verification: The training of the listed personnel was
- verified. All listed individuals completed the required biosafety 101
- training.
- Applicable section(s) of the NIH Guidelines: The committee determined that sections III-F-1, III-F-2, III-F-8, and III-E-1 are appliable.
- **Cell Cultures:** The committee was informed that the tissue used for the cultures will be obtained from animals housed at Marquette University, which were originally obtained from reputable laboratory animal vendors. The committee discussed the health status of the animals housed at Marquette University and discussed the potential for unintended host contaminants in the cultures. The potential risks associated with interactions between such contaminants and the experimental agents were evaluated, and it was determined that the likelihood of an adverse outcome is extremely low.
- **Cell Culture Work Location:** The committee was informed that the cell culture work takes place in a shared space. It was noted that the space is equipped with a card reader and appropriate signage, and that access is restricted when work is in progress.

iii. Required Changes:

- **Registration Categories" Section**
  - Select Category III-E-1.
- **"Project Details" Section**

- Include a statement conveying that the animals from which the tissue is collected come from reputable vendors, that their health status is monitored, and that tissue collection is performed using sterile techniques.
- Specify the procedures for incubator decontamination.

iv. Motion to send Dr. Gasser a list of required changes to later be reviewed by a designated reviewer

- Approve: 11, Deny: 0, Abstain: 0
- Conflicts of interest: None

B. Chris Marshall, BIOL; #5144: "Understanding the evolution of antibiotic resistance"

i. Project Overview: The project aims to expand the understanding of how antibiotic resistance evolves so that new treatments and strategies can be developed to prevent its emergence. The proposed work consists of generating bacterial cultures, exposing susceptible strains of bacteria to antibiotics, and investigating how antibiotic resistance evolves over time. The bacteria that will be exposed to the antibiotics include Risk Group 1 (RG1) organisms (i.e., Escherichia coli K-12, Bacillus subtilis, Staphylococcus epidermidis, and Pseudomonas putida) and Risk Group 2 organisms (i.e., Acinetobacter baylyi, Enterobacter aerogenes, Enterococcus raffinosus, as well as the "safe ESKAPE" variants of Staphylococcus aureus, Pseudomonas aeruginosa, and Acinetobacter baumannii.) These organisms are opportunistic pathogens which possess a number of virulence factors and mechanisms that enable them to escape the host's defensive measures, such as siderophores, toxin production, and lipoproteins. That being said, all of the listed organisms are susceptible to several antibiotics, possess environmental reservoirs, are not genetically modified, and do not pose significant risks to immunocompetent individuals. For these reasons, the committee determined that the proposed work with RG1 organisms may take place at BSL-1 conditions while the work with RG2 organisms must take place under BSL-2 conditions.

ii. Discussion:

- Training verification: The training of the listed personnel was
- verified. All listed individuals completed the required biosafety 101
- training.
- Applicable section(s) of the NIH Guidelines: The committee determined that sections II-F-3, III-F-4, and III-F-7 are applicable.
- **Bacterial Cultures:** The committee inquired about the methods used for bacterial culture preparation. The PI explained that bacterial populations are cultivated using spread plating to quantify colony-forming units (CFUs), and that metal-capped liquid cultures are maintained in Luria-Bertani (LB) broth or minimal media. It was noted that the PI will culture microbes in tubes for 24 hours, after which a 1:100 dilution from one tube to the other will take place. This will be repeated daily for 10 to 20 days. Lastly, to

investigate the effects of the experiment, DNA will be extracted from the cultures for sequencing. It was also noted that the work with RG2 agents will be carried out in a biosafety cabinet, and that the appropriate PPE will be donned for each procedure.

- **Clinical Isolates:** The committee was informed that none of the organisms used in the study are clinical isolates.
- **Antibiotic Resistance:** The committee inquired about the degree of antibiotic resistance that is achieved through the proposed research. The PI informed the committee that the degree of resistance varies depending on the organism and on the genetic mutation through which the resistance was acquired. That being said, the committee was informed that the organisms remain susceptible to other antibiotics after gaining resistance to one antibiotic.

iii. Required Changes

- **"Personnel" Section**
  - Refer to the utilized agents by their Risk Group instead of the Biosafety Level throughout the application.
  - Change "MSDS" to "SDS."
- **"Microorganisms" Section**
  - Update "all three organisms" to "all six organisms."
  - Address source of utilized RG2 organisms.
- **"Project Details" Section**
  - Provide additional information to clarify the procedural steps that will be taken, as well as their sequence.
  - Include a sanitation protocol for the incubators used to incubate the cultures.
  - Modify decontamination procedures to indicate that bleach will be added to liquid cultures to a final concentration of 10%.
  - Modify decontamination procedures to state that bleach will be added with the vessel open or loosely capped to prevent the buildup of gas.
  - Specify that bleach will be used as a disinfectant and not a sterilant.
  - Change "Public Safety" to "Marquette Police."

iv. Motion to send Dr. Marshall a list of required changes to later be reviewed by a designated reviewer

- Approve: 11, Deny: 0, Abstain: 0
- Conflicts of interest: None

C. Chris Marshall, BIOL; #5154 Enrichment and isolation of microorganisms from environmental sources

i. Project Overview: The project seeks to identify aerobic and anaerobic microorganisms with the capacity to remediate pollutants or corrode metals. To achieve this objective, microorganisms will be isolated from environmental sources (e.g., soil samples) and analyzed to gain a better

understanding of their biological and functional properties. The utilized organisms are naturally occurring in the state of Wisconsin, are not genetically modified, exhibit low virulent potential, and do not pose significant risks to immunocompetent individuals. All proposed activities will be conducted under Biosafety Level 2 (BSL-2) conditions.

ii. Discussion

- **Training verification:** The training of the listed personnel was reviewed. It was noted that all but one of the listed individuals completed Biosafety 101 Training. The PI was instructed to ensure that the individual completes the training, as registration approval will not be issued until all listed individuals are appropriately trained.
- Applicable section(s) of the NIH Guidelines: The committee determined that sections II-F-3 and III-F-7 are applicable.
- **Environmental Samples:** The committee was that all environmental samples used in this research are collected in Wisconsin. Additional samples will be obtained following the approval of the registration to support the continued identification of organisms capable of degrading pollutants or corroding metals.
- **Safety Measures:** The committee inquired about the measures in place to prevent the inadvertent amplification of microorganisms with elevated risk profiles when working with the soil samples. The PI explained that all microorganisms are sequenced following isolation and prior to any experimental manipulations to enable accurate identification before further use. It was also stated that the isolation strategy utilized in this registration does not favor pathogens.

iii. Required Changes

- **"Registration Categories"**
  - Please list BL2 as the appropriate containment level.
- **"Personnel" Section**
  - Include the phone numbers of all listed individuals.
  - Ensure that the CITI training of all listed staff members is up to date.
  - Ensure that the newly added staff members complete Biosafety 101 Training.
  - Change "MSDS" to "SDS."
- **"Microorganisms" Section**
  - Move the following bacteria to the RG2 section: Acinetobacter calcoaceticus, Acinetobacter johnsonii, Acinetobacter ursingii, Aerococcus urinaeequi, Aeromonas popofii, Bacillus pumilus, Corynebacterium striatum, Enterococcus hirae, Pantoea agglomerans, Pantoea sp., Pasteurella multocida, Staphylococcus pseudointermedius, Staphylococcus saprophyticus, Staphylococcus warneri,

Stenotrophomonas maltophila, Streptococcus salivarius, Bacillus thuringiensis.

- **"Project Details" Section**
  - Specify that aerosol generating activities (e.g., pipetting, vortexing, etc.) will be performed in a biosafety cabinet.
  - Switch decontaminant to 10% bleach.
  - Change "Public Safety" to "Marquette Police."

iv. Motion to send Dr. Marshall a list of required changes to later be reviewed by a designated reviewer

- Approve: 11, Deny: 0, Abstain: 0
- Conflicts of interest: None

XI. MODIFICATION(S)

i. N/A

XII. DESIGNATED REVIEW(S)

A. New protocol(s)

i. N/A

B. Three year renewal(s)

i. Nick Raddatz, BISC; #5129: "The Role of Extrasynaptic Glutamate Transmission in Neuron-Astrocyte Communication"

ii. Kristi Streeter, PT; #5124: "Phrenic afferents and diaphragm pacing-induced recovery of breathing following spinal cord injury"

C. Modification(s)

i. Murray Blackmore, BISC; #4598: "Combinatorial Manipulation of Transcription Factors to Promote CNS Regeneration"

ii. Lisa Petrella, BIOL; #4589: "Temperature-sensitive germline structures and temperature thresholds of fertility in Caenorhabditis nematodes"

XIII. TERMINATION(S)

A. Krassimira Hristova, BIOL; BR-211: "Investigating the effects of disinfection on the persistence of surface-associated pathogens"

XIV. ADDITIONAL BUSINESS

A. **Cholera Toxin B (CTB):** The IBC discussed whether the use of CTB should be covered by an IBC registration. It was determined that due to its non-toxic and non-hazardous nature, its use does not need to be covered by IBC registrations. That being said, the committee decided that the use of Cholera Toxin B should be tracked by the Marquette University chemical inventory system and therefore overseen by Environmental Health & Safety.

XV. TRAINING

A. N/A

XVI. PUBLIC COMMENTS

A. N/A

XVII. INSPECTIONS/ONGOING OVERSIGHT

A. N/A

XVIII. ADJOURN 1:32 PM