Iowa State University
Institutional Biosafety Committee Meeting for projects covered by the NIH Guidelines
August 12, 2025
Via Webex

X	Whitham, Steve (Chair and Plant expert	X	Kaptur, Jean (Animal expert) (2:10 PM)	-	Sahin, Orhan (Member)
X	Cho, Michael (Member)	X	Matos, Betsy (BSO)	X	Schmidt, Clarice Lauer (Member)
X	Hall, Katie (alt. Matos/BSO)	-	McGill, Jodi (Member)	X	Unruh, Daniel (Member)
X	Halverson, Larry (alt. Vollbrecht/Plant expert)	X	Pineyro-Pineiro, Pablo (alt Sahin)	X	Visek, Callie (Local non-affiliated member)
-	Jurenka, Russell (Member)	X	Reilly, Sharon (Local non-affiliated member)	X	Vollbrecht. Erik (Plant expert)
				X	Ziegenfuss, Steve (alt. Matos/BSO)

Key: X = present; - = absent

CALL TO ORDER:

S. Whitham (Vice-chair) called the meeting to order at 2:08 PM. A quorum was present at all times. The meeting was held via Webex. All committee members were provided with all documents prior to the meeting.

Other attendees: S. Kaatz (Office of Research Ethics (ORE)), X, Yuan (Plant Pathology/Entomology/Microbiology), S. Zamzow (ORE)

The minutes from the July meeting were reviewed. There was a motion to approve the minutes as written.

9 total votes:	9	For	0	Against	0	Abstain	

PROJECTS FOR DISCUSSION:

The following matters, addressed in protocol review forms, will be considered for all reviewed projects:

- Verification that the PI and laboratory staff performing the research have been appropriately trained in the safe conduct of research – all required IBC trainings must be completed before an application is reviewed at the full committee meeting
- Agent characteristics (e.g., virulence, pathogenicity, environmental stability) – this information is included in the submitted application
- Types of manipulations planned – this information is included in the submitted application
- Source(s) of the inserted DNA sequences (e.g., species) – this information is included in the submitted application
- Nature of the inserted DNA sequences (e.g., structural gene, oncogene) – this information is included in the submitted application
- Host(s) and vector(s) to be used – this information is included in the submitted application
- Whether an attempt will be made to obtain expression of a foreign gene, and if so, the protein that will be produced – this information is included in the submitted application
- Containment conditions to be implemented – this information is included in the submitted application

- Applicable section of the *NIH Guidelines* (e.g., Section III-D-1, Section III-E-1, etc.) – this information is included in the submitted application

1) (Amendment – Yu) CRISPR-mediated genome editing for function validation of genes involved in plant height in sorghum and maize (IBC-23-116)

Overview:

- The goal of this study is to use CRISPR technologies to pinpoint the location and function of the genes controlling agronomic traits to improve maize and sorghum for agricultural production.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Plant Biosafety Level 1 (BL1-P) and Biosafety Level 1 (BSL-1).
- The currently applicable NIH Guidelines are III-E-2-a.

Committee Discussion:

- Prior to the meeting, the PI addressed preliminary IBC questions. Based on the updated application, the committee did not have any additional questions or concerns.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Plant Biosafety Level 1 (BL1-P) and Biosafety Level 1 (BSL-1).
- The approved NIH Guidelines are III-E-2-a.
- There was a motion to approve this application.

10 total votes:	10	For	0	Against	0	Abstain	

2) (Annual review - Gomes) Nanotechnology Applications in Biological, Agricultural, and Food Materials (IBC-24-089)

Overview:

- This research program is aimed at using nanotechnology approaches to engineer and design materials to be applied to agricultural and biological systems.
- The currently biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and Biosafety Level 2 (BSL-2). This amendment would add Animal Biosafety Level 1 (ABSL-1).
- The currently approved NIH Guidelines are III-E.

Committee Discussion:

- Prior to the meeting, the PI addressed preliminary IBC questions. Based on the updated application, the committee did not have any additional questions or concerns. The updated application removed the proposed ABSL-1 containment but did add Biosafety Level 1 (BSL-1) as necessary containment.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), Biosafety Level 2 (BSL-2) and Biosafety Level 1 (BSL-1).
- The applicable NIH Guidelines are III-E.
- There was a motion to approve this application.

10 total votes:	10	For	0	Against	0	Abstain	

3) (Reviewed and approved at the July Meeting - Caceres) Research on Porcine Reproductive and Respiratory Virus (PRRSV) (IBC-25-056)

Overview:

- The goal of this study is to generate information to develop novel vaccine platforms and antiviral targets related to the viral agent or host-targeted antivirals.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The currently approved NIH Guidelines are III-D.

When an email was being prepared to be sent to NIH/OSP about this study to confirm containment, it was determined that III-D of the NIH Guidelines does not apply but rather III-E applies as all of the rDNA involved is PRRS virus and 100% of the genome and the Guidelines recommend BL1. The PI confirmed and has now indicated that the applicable NIH Guidelines are III-E and he has indicated rDNA Biosafety Level 1 (BL1) and Biosafety Level 2 (BSL-2) containment levels are appropriate.

Committee Discussion:

- Based on further discussion by the committee in regard to guidance provided by USDA and the listing of containment with work with PRRSV as BSL-2 in the BMBL, it was determined that BL2 would be the most appropriate containment level for the recombinant in vitro work with PPRSV. The PI will be asked to confirm his agreement with this change to BL2. Section III-E would be the most appropriate NIH Guidelines for this work which the PI did confirm prior to the meeting.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-E.
- There was a motion to approve this application with the following stipulations:
    - PI must confirm that BL2 containment will be used for the recombinant in vitro work.

10 total votes:	10	For	0	Against	0	Abstain	

4) (New - Fasina) ELUCIDATION AND CHARACTERIZATION OF PARVOVIRUS MINUTE VIRUS OF CANINES (MVC) RNA PROCESSING AND EPITRANSCRIPTOME (IBC-25-058)

Overview:

- The aims of this project are designed and geared to investigate the mechanism of parvovirus minute virus of canine (MVC) NP1 mediated-viral mRNA processing.
- The proposed biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The proposed NIH Guidelines are III-D-3-a.

Committee Discussion:

- Prior to the meeting, the PI updated the IBC application addressing the preliminary questions. These changes in the application resulted in the PI confirming that section III-E-1 of the NIH Guidelines best applies to this study.

Review:

- The approved biosafety containments levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-E-1.
- There was a motion to approve this application.

10 total votes:	10	For	0	Against	0	Abstain	

5) (Reviewed and approved at the July Meeting - Caceres) Development of cell lines from tissues of avian species (IBC-25-059)

Overview:

- The goal of this study is to generate information to develop novel vaccine platforms and antiviral targets related to the viral agent or host-targeted antivirals.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Biosafety Level 2 (BL2), Animal Biosafety Level 1 (ABSL-1) and Biosafety Level 2 (BSL-2).
- The currently approved NIH Guidelines are III-D, III-D-1-a, III-D-2-a and III-D-2-b.

When an email was being prepared to be sent to NIH/OSP about this study to confirm containment, it was determined that III-D-2-b of the NIH Guidelines does not apply as there are no restricted agents being used. The PI confirmed and has now indicated that the applicable NIH Guidelines are III-D, III-D-1-a and III-D-2-a.

Committee Discussion:

- Based on some wording in the IBC protocol, there is some confusion as to what is occurring in this study. It was determined that the PI should clarify but as long as the PI is using a replication incompetent retrovirus, there is no concern with these clarifications being reviewed by the chair and biosafety offer for final approval versus having the application come back to the committee for final review. For completeness of the application, the PI should also list the three plasmids mentioned.
- It was noted that the changes that will be made do not affect the biosafety level of this study.
- Even though animals are needed for the tissues in this study, as the PI is not working with infected animals ABSL-1 should be unmarked.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-D, III-D-1-a and III-D-2-a.
- There was a motion to approve this application with the following stipulations and change:
    - Stipulations:
        - On the “Experimental Design” tab, the conflicting statements about the infectious viruses must be clarified.
        - On the “Experimental Design” tab, the PI should clarify the retroviruses that will be used should be listed. These must be replication incompetent otherwise the application must come back to full committee for review.
        - On the “Experimental Design” tab, the three plasmids should be listed.
    - Change:
        - ABLS-1 should be unmarked on the “Biosafety” tab.

10 total votes:	10	For	0	Against	0	Abstain	

6) (Reviewed and approved at the July Meeting - Verhoeven) Testing of mRNA vaccines for efficacy against viral pathogens in vivo (IBC-25-061)

Overview:

- The goal of this study is to develop new mRNA vaccines for equine herpes virus-1 and test the efficacy of those vaccines in vivo prior to a future study.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2), Animal Biosafety Level 2 (ABSL-2) and Biosafety Level 2 (BSL-2).
- The currently approved NIH Guidelines are III-D-2-a, III-D-3-a and III-E-1.

When an email was being prepared to be sent to NIH/OSP about this study to confirm containment, it was determined that III-D-4-a (due to the administration of mRNA vaccine in mice) of the NIH Guidelines applies rather than III-D-3-a (as there is not any recombinant work with infectious or defective virus in tissue culture). The PI was asked to confirm. The PI confirmed and has now indicated that the applicable NIH Guidelines are III-D-2-a, III-D-4-a and III-E-1.

Committee Discussion:

- The PI reviewed the updated application to reflect the applicable NIH Guidelines. Based on this updated application, the committee did not have any additional concerns with this study.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2), Animal Biosafety Level 2 (ABSL-2) and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-D-2-a, III-D-4-a and III-E-1.
- There was a motion to approve this application.

10 total votes:	10	For	0	Against	0	Abstain	

7) (New - Yuan) Microbiology 4400: Microbial Diversity, Genetics & Physiology Laboratory Course (IBC-25-064)

Overview:

- This course is designed to train the next generation of scientists and laboratory technicians in microbiology, which is essential for continued progress in biomedicine, including antibiotic resistance, biotechnology, and environmental stewardship.
- The proposed biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and Biosafety Level 1 (BSL-1).
- The proposed NIH Guidelines are III-E.

Committee Discussion:

- Prior to the meeting, the PI updated the IBC application addressing the preliminary questions. Based on this updated application, there were no additional controverted issues.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and Biosafety Level 1 (BSL-1).

- The proposed NIH Guidelines are III-E.
- There was a motion to approve this application.

10 total votes:	10	For	0	Against	0	Abstain	

OLD BUSINESS:

i. None at this time.

NEW BUSINESS:

i. IBC Review of Plant Pathogens – The committee reviewed this edited policy. There were no concerns. There was a motion to approve this policy.

10 total votes:	10	For	0	Against	0	Abstain	

ii. Committee membership changes – A committee member was thanked for his 5 years of service as his term will be ending after this month.

FOR THE GOOD OF THE ORDER:

Meeting dates are proposed for September 9, 2025 and October 14, 2025. Meetings will be held via Webex. Meetings begin after the non-NIH meeting has concluded.

ADJOURNMENT:

The meeting was adjourned at 2:34 PM.

Recorded by: Sarah Zamzow, IACUC/IBC Administrator