Iowa State University
Institutional Biosafety Committee Meeting for projects covered by the NIH Guidelines
September 9, 2025
Via Webex

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

Key: X = present; - = absent

CALL TO ORDER:

O. Sahin (Vice-chair) called the meeting to order at 2:15 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)), S. Zamzow (ORE)

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

8 total votes:	5	For	0	Against	3	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) (Annual review – Halverson) Identification of genes of Pseudomonas species involved in water deficit tolerance (IBC-23-055)

Overview:

- The goal of this project is to understand how bacteria of the genus *Pseudomonas* adapt to water-limited conditions and how those adaptations differ from those for tolerating other environmental stresses, particularly high salinity, reactive oxygen species, and environmental pollutants.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Biosafety Level 2 (BL2), rDNA Plant Biosafety Level 1 (BL1-P), Biosafety Level 1 (BSL-1), and Biosafety Level 2 (BSL-2).
- The currently applicable NIH Guidelines are III-D, III-D-1-a, III-D-2-a, and III-E-2-a.

Committee Discussion:

- There were no controverted issues regarding this application.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Biosafety Level 2 (BL2), rDNA Plant Biosafety Level 1 (BL1-P), Biosafety Level 1 (BSL-1), and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-D, III-D-1-a, III-D-2-a, and III-E-2-a.
- There was a motion to approve this application.

8 total votes:	8	For	0	Against	0	Abstain

2) (Annual review - McGrail) Zebrafish gene editing and genome engineering (IBC-23-064)

Overview:

- The central goal for this project is to provide the zebrafish community with genetic resources that allow robust spatial and temporal control of gene activity for genes that promote or restore human health.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and rDNA Animal Biosafety Level 1 (BL1-N).
- The currently applicable NIH Guidelines are III-D-4-a.

Committee Discussion:

- There were no controverted issues regarding this application.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and rDNA Animal Biosafety Level 1 (BL1-N).
- The applicable NIH Guidelines are III-D-4-a.
- There was a motion to approve this application.

8 total votes:	8	For	0	Against	0	Abstain

3) (Annual review - Peters) Peters - Natural Products Biosynthesis (IBC-24-105)

Overview:

- This study will provide access to rare chemicals that may prove to be useful as industrial and/or pharmaceutical compounds.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Plant Biosafety Level 1 (BL1-P), rDNA Plant Biosafety Level 2 (BL2-P), Biosafety Level 1 (BSL-1), and Biosafety Level 2 (BSL-2).
- The currently applicable NIH Guidelines are III-D-2-a and III-E.

Committee Discussion:

- As the PI has marked "yes" to the gain of function question, the PI will be asked to explain the gain of function work he is doing in this study as currently there is nothing in the protocol that suggests gain of function work.

Review:

- There was a motion to table this application with the PI addressing the following question:
  - On the "Experimental Design" tab, the PI must explain the gain of function work that is to be performed in this study.

8 total votes:	8	For	0	Against	0	Abstain	

4) (Amendment - McGill) Immunizations of Bovines with Recombinant Antigens and Inactivated Viruses (IBC-24-134)

Overview:

- The objective of this protocol is to generate ultralong-CDR3s antibodies specific to pathogens of interest.
- Previously, a biosafety level was not necessary for this study as the committee was evaluating the disposal method of animals due to an experimental biological being used. This amendment adds rDNA Biosafety Level 2 (BL2), rDNA Animal Biosafety Level 2 (BL2-N), Animal Biosafety Level 1 (ABSL-1), Animal Biosafety Level 2 (ABSL-2), Biosafety Level 1 (BSL-1), and Biosafety Level 2 (BSL-2).
- Previously, the NIH Guidelines did not apply to this study. This amendment adds section III-D-4-b of the NIH Guidelines.

Committee Discussion:

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

Review:

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

8 total votes:	8	For	0	Against	0	Abstain	

5) (Previously reviewed and approved at the July 2025 meeting - Olmedo Velarde) SOP for Biosafety (plant pathogens, recombinant organisms) (IBC-25-006)

After the July meeting, the application went to NIH/OSP for confirmation on the biosafety levels and applicable NIH Guidelines. NIH/OSP also indicated that rDNA Plant Biosafety Level 1 (BL1-P) containment be used.

Overview:

- The goals of this study are to: 1) understand the interactions between hemipteran insect vectors with their plant hosts and the pathogens they transmit; and 2) characterize the microbe populations associated with hemipteran insects, such as leafhoppers and aphids.
- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1) and Biosafety Level 1 (BSL-1). The PI has now added rDNA Plant Biosafety Level 1 (BL1-P).
- The applicable NIH Guidelines are III-E and III-D-4.

Committee Discussion:

- There were no controverted issues regarding this application.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), Biosafety Level 1 (BSL-1), and rDNA Plant Biosafety Level 1 (BL1-P).
- The applicable NIH Guidelines are III-E and III-D-4.
- There was a motion to approve this application.

8 total votes:	8	For	0	Against	0	Abstain	

6) (Amendment - Rued) Rued Lab Carver Grant IBC Protocol (IBC-25-012)

Overview:

- The goal of this study is to understand how, why, and when RaS-RiPPs are made, and what they do during infections. RaS-RiPPs are chemicals that are produced from a class of bacteria that play a vital role in human health.
- The currently approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The currently applicable NIH Guidelines are III-D, III-D-1-a, and III-D-2-a.

Committee Discussion:

- There were no controverted issues regarding this application.

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-D, III-D-1-a, and III-D-2-a.
- There was a motion to approve this application.

8 total votes:	8	For	0	Against	0	Abstain	

7) (Reviewed and approved at the July Meeting and discussed again at the August 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 previously approved biosafety containment levels for this project are rDNA Biosafety Level 1 (BL1), rDNA Biosafety Level 2 (BL2), and Biosafety Level 2 (BSL-2). In this updated application, the PI also removed reference to rDNA Biosafety Level 1 (BL1).
- The currently applicable NIH Guidelines are III-D, III-D-1-a, and III-D-2-a.

Committee Discussion:

- Prior to the meeting, the PI did address the stipulations from the August meeting.
- The PI also updated the application to specify the specific manipulations that are to be conducted at BL1 containment and explain why. The PI did remove reference to BL1 which the committee determined still applies for the *E. coli* bench work. The PI will be asked to confirm BL1 will be used for that portion of the work and that PI will also be asked to include the rDNA work with the *E. coli* on the rDNA/transgenics tab.
- The PI has also listed the retroviral particles in the pathogens/biological toxins table. It was determined that this should be removed from the table as it is a single replication vector and it is not a pathogen

Review:

- There was a motion to table this application with the PI addressing the following questions:
  - On the “Biosafety” tab, the PI must include BL1 containment.
  - On the “rDNA/Transgenics” tab, the PI must include the *E. coli* bench work that will occur in this study.
  - On the “Pathogens/Biological Toxins” tab, the PI must remove the listing of the retro viral particle.

8 total votes:	8	For	0	Against	0	Abstain

During the meeting, a committee member sent an email to the IBC administrator and IBC vice-chair that he was unable to unmute himself during the final vote of this protocol. This email was noticed after the meeting. He noted that he would like to abstain from voting on this protocol due to being a collaborator with the PI on other studies. This does not change the outcome of this protocol as it was tabled and will be discussed at a future meeting. With this change to an abstention for one vote:

8 total votes:	7	For	0	Against	1	Abstain

8) (New - Essner) FDT-BioTech: VAScTWIN: Multiscale Digital Twin for Predictive Modeling and Genetic Control of Cardiac Vascular Regeneration (IBC-25-065)

Overview:

- The central goal for this project is to model angiogenesis using computational tools.
- The proposed biosafety containment level for this project is rDNA Biosafety Level 1 (BL1).
- The proposed NIH Guidelines are III-D-4-a.

Committee Discussion:

- There is confusion regarding the location of this study as the location appears to be a typo. The PI will be asked to clarify.

Review:

- The approved biosafety containment level for this project is rDNA Biosafety Level 1 (BL1).

- The applicable NIH Guidelines are III-D-4-a.
- There was a motion to approve this application with the following stipulation:
    - On the “Biosafety” tab, the PI must clarify the location of this study.

8 total votes:	8	For	0	Against	0	Abstain	

9) (New - Gauger) FLU97 Multivalent Swine HA mRNA-LNP Vaccine (IBC-25-066)

Overview:

- The objective of this study is to assess mRNA expressing hemagglutinin (HA) genes of H1 and H3 subtype swine influenza A viruses (IAV) encapsulated in lipid nanoparticles (LNP) and delivered as mRNA-LNP vaccines to an animal model.
- The proposed biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2), rDNA Animal Biosafety Level 2 (BL2-N), Animal Biosafety Level 2 (ABSL-2), and Biosafety Level 2 (BSL-2).
- The proposed NIH Guidelines are III-F-1.

Committee Discussion:

- Prior to the meeting, the PI updated the IBC application addressing the preliminary question. This updated application did change the applicable NIH Guidelines to III-D-4-a.
- Prior to the meeting, the correct dosages were provided for the drugs that will be administered to the animals. The dosages provided do match the dosages listed in the IACUC application. As the drug dosages do not alter the biosafety aspects of this study, the change in dosages will be made by the IBC office.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2), rDNA Animal Biosafety Level 2 (BL2-N), Animal Biosafety Level 2 (ABSL-2), and Biosafety Level 2 (BSL-2).
- The applicable NIH Guidelines are III-D-4-a.
- There was a motion to approve this application with the following change:
    - On the “IACUC Information” tab, the drug dosages will be updated to match the IACUC application.

8 total votes:	8	For	0	Against	0	Abstain	

10) (New - Strable) Molecular Genetics of Plant Vegetative, Inflorescence and Floral Architectures (IBC-25-069)

Overview:

- The goal of this study is to understand genetic mechanisms that regulate meristem function and those that underlie patterning and growth of vegetative and reproductive organs, processes that ultimately shape a plant.
- The proposed 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 proposed NIH Guidelines are III-E-1 and III-E-2-a.

Committee Discussion:

- There were no controverted issues regarding this application.

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 applicable NIH Guidelines are III-E-1 and III-E-2-a.
- There was a motion to approve this application.

8 total votes:	8	For	0	Against	0	Abstain

11) (New - Gauger) FLU97b Monovalent Swine HA IL12mRNA-LNP Vaccine (IBC-25-072)

Overview:

- The objective of this study is to assess a monovalent IL12mRNA expressing hemagglutinin (HA) gene of H1 subtype swine influenza A viruses (IAV) and interleukin 12 (IL12) protein encapsulated in lipid nanoparticles (LNP) and delivered as IL12mRNA-LNP vaccines to an animal model.
- The proposed biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2), rDNA Animal Biosafety Level 2 (BL2-N), Animal Biosafety Level 2 (ABSL-2), and Biosafety Level 2 (BSL-2).
- The proposed NIH Guidelines are III-F-1.

Committee Discussion:

- Prior to the meeting, the PI updated the IBC application addressing the preliminary question. This updated application did change the applicable NIH Guidelines to III-D-4-a.
- Based on this updated application, there are no additional controverted issues.

Review:

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

8 total votes:	8	For	0	Against	0	Abstain

12) (New - Koltes) Persistence of *Listeria monocytogenes* (IBC-25-074)

Overview:

- The aim of this project is to understand the molecular mechanisms of *Listeria monocytogenes* persistence (i.e., the long-term survival) in food and food production environments.
- 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-1-a and III-D-2-a.

Committee Discussion:

- There were no controverted issues regarding this application.

Review:

- The approved biosafety containment levels for this project are rDNA Biosafety Level 2 (BL2) and Biosafety Level 2 (BSL-2).
- The appliable NIH Guidelines are III-D-1-a and III-D-2-a.

- There was a motion to approve this application.

7 total votes:	7	For	0	Against	0	Abstain	

One individual left before final discussion and vote as he is key personnel on this protocol.

OLD BUSINESS:

i. None at this time.

NEW BUSINESS:

i. Introduction of new committee members – A new member that has joined the committee was introduced.

FOR THE GOOD OF THE ORDER:

Meeting dates are proposed for October 14, 2025 and November 11th. Meetings will be held via Webex. Meetings begin after the non-NIH meeting has concluded.

ADJOURNMENT:

The meeting was adjourned at 3:01 PM.

Recorded by: Sarah Zamzow, IACUC/IBC Administrator