MEETING MINUTES
INSTITUTIONAL BIOSAFETY COMMITTEE (IBC)
CLEMSON UNIVERSITY
December 2, 2025-Zoom

Call to order at 2:01PM by the Chair, James Morris. The IBC has 10 voting members, and 6 members are required to conduct business. The Chair votes in the event of a tie vote or a need to have a quorum. The Chair is not voting.

Attending: James Morris-IBC Chair
Cassie Gregory-Staff member
Sachin Rustgi-Plant Expert
Daniel Whitehead-Chemical Expert
Cheryl Ingram-Smith-IBC Vice Chair
Kerri Kwist-BSO
Bonnie Kelley, Community Member
Jim Grieger (alternate BSO)
Allison Honea-Occupational Health (ex officio)
Chris Saski-Plant Expert/Gene Drive Expert

Not in Attendance: Michele Eller, Community Member
Matt Breed-University Vet
Rhonda Ryals-Research Security (ex-officio)
Robin Tyndall, ORC Director (ex-officio)

In Attendance ORC: Hope Smith-Sielicki-IBC Administrator

Call to Order

- **CONFLICT OF INTEREST**

  All IBC members are reminded of their obligation to disclose any potential conflicts of interest. According to the NIH Guidelines, no member may be involved (except to provide information) in the review or approval of a project in which they have been or expect to be engaged or have a direct financial in the project or its outcomes

I. MINUTES OF LAST MEETING(S)

1. A motion was made and seconded to approve the November 11, 2025, meeting minutes.

   Tally: For-7 Against-0 Abstain-0

   Motion approved.

II. TRAINING AND ANNOUNCEMENTS

None

II. OLD BUSINESS

IBC2025-0186	**Sourabh Dhingra**
Title:	Molecular Mechanisms of Pathogenicity in Aspergillus fumigatus
Review type:	Full Committee
Designated Reviewers:	Vice Chair and BSO
Purpose:	The purpose is to elucidate molecular pathways associated with pathogenicity in Aspergillus fumigatus. This involves studying virulence, and stress response, including anti-fungal drug response via reverse genetics and forward genetic screening to identify genes involved in various stresses and virulence.
NIH Guidelines:	III-D-1, 2
Biocontainment:	BSL-1/2
Status:	On agenda for Full Committee Review

Items discussed included: This is an on-going protocol for the Dhingra Lab. The research examines pathways involved in pathogenicity in Aspergillus fumigatus, a fungal respiratory pathogen. Dr. Dhingra's lab is working to identify genes associated with response to stresses, including antifungal drugs, pH, cell wall agents, and low oxygen. They will create mutants to study the role of genes of interest in these different stress responses and pathogenicity. They will use a mouse model of invasive pulmonary aspergillosis to assess virulence of the mutants and their response to antifungal drugs.
There are some concerns here to be discussed:
(1) The PI plans to examine cross-species conservation of function by transferring genes between Aspergillus fumigatus and Aspergillus nidulans. They will also transfer genes from genetically intractable strains into A. fumigatus. Mention is made of gene functions that regulate mycotoxin production, which could create more harmful strains. A key thing here is that the genes to be

targeted are not listed. PI states that the target genes will be identified based on forward genetics or via sequencing experiments. It is not fully clear what types of genes will be targeted so it is difficult to fully assess the risk of creating more virulent strains of A. fumigatus or strains that are more drug resistant.
(2) PI states that all fungal isolates collected, acquired, or generated will be stored at -70C, yet also state that genetically intractable Aspergillus species will not be grown in the lab, but DNA will be acquired from other labs. PI also states that fungal isolates will be grown in the lab as slants, on plates, or in liquid medium. This will require clarification as to what strains will be grown in the lab and which won't, especially since they state that they will acquire azole-resistant strains. The goal is to create less resistant strains, but manipulation of resistant strains could backfire and result in higher resistance.
(3) There is an IACUC protocol in place for mouse work, but how mice would be used is not discussed. Presumably to analyze how virulent the modified strains are and whether they are more or less azole-resistant in an animal model of infection. If mouse work will be done as part of this protocol Section III-D.4 should also be checked.
Rewording has occurred but PI needs to make updates to Section B (i.e transport portion, carcass disposal, waste pickup) before protocol can be approved.
These items should be discussed and clarifications to the protocol are needed to address them

A motion was made to table the protocol.

Tally: For-7 Against-0 Abstain-0

Motion approved

III. NEW PROPOSALS- RECOMBINANT DNA FULL REVIEW

III.a Section III-D - Experiments that Require Institutional Biosafety Committee Approval Before Initiation

IBC2025-0217 **Sachin Rustgi**

Title: Next-generation plant breeding and management strategies to develop healthy, safe, and surplus crops
Review type: Full Committee
Designated Reviewers: Chris Saski and BSO
Purpose: The purpose is to 1.) Develop reduced immunogenicity wheat and peanut genotypes by targeting genes

encoding immunogenic proteins via a CRISPR-Cpf1 and -Cas3-mediated gene editing approach. 2.) Develop non-reversible atoxigenic Aspergillus flavus strains using a CRISPR-mediated gene drive via targeting a vital aflatoxin biosynthesis gene AflC and the mating type gene MAT1-2.3.) Development of cotton genotypes with reduced to no regrowth after defoliation and desiccation. We have identified three candidate genes via expression QTL analysis. 4.) Development of peach rootstocks resistant to Armillaria root rot through Ni and Cu sequestration and ectopic expression of wheat oxalate oxidase in roots and crown tissue.

NIH Guidelines:	III-D-3,5, III-E-1,2
Biocontainment:	BSL-1/1P
Status:	On agenda for Full Committee Review

Items discussed included: This is an on-going project for the Rustgi lab. This is an umbrella protocol covering multiple projects. 1.) The wheat and peanut project will use CRISPR-Cas-9 systems to knockout genes. 2.) The aspergillus project will knockout Afl-C genes (non-reversible). 3.) The cotton project will focus on developing cotton genotypes with reduced/no regrowth after defoliation. 4.)The peach project focuses on developing rootstocks that are resistant to root rot. 5.) All plant activities will be carried out in a bay at the new greenhouses at PDREC. 6.) Add a statement about allergies and using the MSP to the approval letter.

A motion was made to approve the protocol.

Tally: For-6 Against-0 Abstain-1

Motion approved

III.b Section III-E - Experiments that Require Institutional Biosafety Committee Notification Simultaneously with Initiation

None

IV. NEW RECOMBINANT DNA PROTOCOLS THAT ARE EXEMPT REVIEW

(SECTION III-F OR APPENDIX C)

None

V. NEW PROPOSALS NOT INVOLVING RECOMBINANT DNA REQUIRING FULL COMMITTEE REVIEW

None

VI. NEW BUSINESS

1. Report of Actions was reviewed and accepted by the committee.
2. The BSO reported:
    - No rDNA spills or accidents
3. The Occupational Health Office reported:
    - No accidents reported

VII. NEXT MEETING

Tuesday, January 6, 2026 at 2pm

VIII. ADJOURNMENT

A motion was made to adjourn at 2:39pm.

Approved by:

_____ _____

James Morris, Ph.D. Date
Chair, Institutional Biosafety Committee
Professor, Genetics and Biochemistry