IBC Agenda

January 23rd 2026

https://reed-edu.zoom.us/j/92789238506?pwd=eDRMviL0uJPGre3ZoSeHDOF6VbnIwR.1&jst=2

Meeting adjourned at 1:02 PM
Attendees: Sharon Torigoe, Jay Mellies, April Sams, Aaron Haddeland, Jeremy Coate

General discussion

- Explore electronic form–reach out to L&C (sponsres@lclark.edu)
- Links broken in our current form.
- Who is our other community member-Madison Reithman–was unable to attend.
- Exemption status for different commonly used E. Coli strain derivatives – K-12s exempt while B derivatives are not

Work archived

- None

Exempt work FYI

- **Applewhite**-work remains the same; tissue culture falling under III-F-1 of the NIH guidelines
- **Cerveny**- work remains the same; gene assay falling under III-F-1 of the NIH guidelines
- **Chacon**-work remains the same; K-12 host/vector system falling under III-F-8 of NIH guidelines
    - Why is Chacon's work exempt vs. Cass? Based on E.coli strain.
    - Confirm that Chacon is not working with the BL21 derivative.
        - Mellies verified that Chacon is in fact with C41. Document will be revised as work is not exempt.

Non-exempt work

- **Cass**- work remains the same; transforming CYP3A4 DNA plasmid into E.Coli and then expressing the protein in E.Coli and purifying it via Nickel-Resin. Failing under III-E-1 of the NIH Guidelines. BL1
- **Ahuja**-NEW. Work involves *E. coli* strains C41(DE3), BL21(DE3), and DH5α transformed with plasmids conferring ampicillin, kanamycin, or chloramphenicol resistance. These activities fall under NIH Guidelines Section III-E-1 and do not require annual renewal, as they involve recombinant nucleic acids containing less than two-thirds of a eukaryotic viral genome and are maintained under BL1 containment. Additionally, work is beginning

with yeast expression vectors (pPICZ) and the *Pichia pastoris* cell line for expression of the eukaryotic gene SPDI from *Drosophila melanogaster*.
    - April comments: Work with yeast=E-II-A
    - Biosafety: Researchers will maintain proper sanitation, by wearing gloves, washing hands, decontaminating surfaces and either bleaching or autoclaving materials. Disinfected with bleach or red bagged for incineration.
- O'Brien-NEW. Work involves Saccharomyces *cerevisiae*, and *Pichia pastoris* (all Risk Group 1) transformed with plasmids conferring kanamycin or zeocin resistance. These plasmids contain no viral sequences, toxins, or pathogenic genes. The work falls under Section III-E-1 of the NIH Guidelines and Appendix E-II-A (for yeast).
    - These experiments require IBC notification only, may be conducted at BSL-1 containment, and do not require annual renewal under NIH Guidelines.
    - Biosafety: Researchers will maintain proper sanitation, by wearing gloves, washing hands, decontaminating surfaces and either bleaching or autoclaving materials that come in contact with E. coli or yeast cells harboring the plasmid containing the mutant genes. Disinfected with bleach or red bagged for incineration.
- **Coate-** Work remains the same with E. coli to generate and amplify DNA constructs of interest and A.tumefaciens to integrate DNA constructs into Arabidopsis thaliana plants. Research involves plant molecular biology approaches. Host with two vectors that express fluorescent proteins. Falling under III-E-2 of the NIH Guidelines. BL1-P
    - CAS9 CRISPR changes within NIH how we report what we are doing with it.
- **Gonzalez-Diaz**- Work remains the same. Research involves the use of several recombinant adeno-associated virus (AAV) vectors w/out helper to deliver specific genes into targeted brain regions in rats. Falling under Section III-E-1 of NIH Guidelines.
- **Mellies**- NEW The laboratory investigates the molecular mechanisms by which enteraggregative *E. coli*, a BSL-2 pathogen, causes diarrheal disease in humans. Current work includes constructing gene deletions in this strain using the lambda Red recombinase system to identify bacterial receptors targeted by bacteriophages. Antibiotic resistance markers are used transiently for selection but are removed from final constructs via a flippase system. This work falls under NIH Guidelines Section III-D-1, involving recombinant DNA in a Risk Group 2 agent conducted at BL2 containment but does not require NIH Director Major Action.
    - Biosafety: Students working with the E. coli wt and recombinant strains will be protected by wearing a lab coat, gloves, and protective eyewear, and covered shoes. They will conduct experiments in a BSL-2 Biosafety cabinet in the lab. Spills will be sanitized. Cultures containing the infectious agent will be disinfected using bleach, then autoclaved before pouring into the sink drain.

- Individual contamination-washing hands with soap and water–handout and training that is given to students. 10% bleach solution for lab benches
- Lab signage–is it present? Equipment should be signed as well.
- How are cultures being moved to shared space? The majority of work is being done in the lab. When we do have to use common equipment we instruct individuals on spill response. Transfer of culture happens within in lab and then they would take them across to roto and spin.

References:

NIH Guidelines

Section III-F. Exempt Experiments

III-F-1: Those synthetic nucleic acids that: (1) can neither replicate nor generate nucleic acids that can replicate in any living cell (e.g., oligonucleotids or other synthetic nucleic acids that do not contain an origin of replication or contain elements known to interact with either DNA or RNA polymerase), and (2) are not designed to integrate into DNA, and (3) do not produce a toxin that is lethal for vertebrates at an LD50 of less than 100 nanograms per kilogram body weight.

III-F-8: Those that do not present a significant risk to health or the environment, as determined by the NIH Director, with the advice of the RAC, and following appropriate note and opportunity for public comment.

Appendix E-II-A — Recombinant or Synthetic Nucleic Acid Molecules in Yeast (IBC Notification with Initiation) Applies to experiments in which recombinant or synthetic nucleic acid molecules are introduced into yeast (Saccharomyces cerevisiae or other non-pathogenic yeasts, including Pichia pastoris) using certified plasmids or host–vector systems. Includes episomal or integrative plasmids used for gene expression, protein production, or functional studies.

Section III-E. Experiments that Require IBC Notice Simultaneous with Initiation

III-E-1: Experiments involving the formation of recombinant or synthetic nucleic acid molecules containing no more than two-thirds of the genome of any eukaryotic virus. Note: For BSL-1 containment, it must be demonstrated that the cells lack helper virus for the specific families of defective viruses being used. If helper virus is present, refer to Section III-D.

III-E-2: Experiments involving whole plants.

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

III-D-1: Experiments using Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents as Host-Vector Systems

III-D-1-a: Introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2 agents; usually BSL-2/ABSL-2 containment.

Action items

- [x] ~~Reach out to Chacon to verify E.coli strain~~
- [ ] Chacon to revise registration document
- [ ] Explore electronic form
- [ ] Verify Mellies lab has proper signage