Are you using POTENTIALLY HAZARDOUS BIOLOGICAL AGENTS?

FORM 6A & 6B QuickSheet

What are Potentially Hazardous Biological Agents?

- Microorganisms that may cause disease in other living organisms, such as bacteria, viruses, viroids, prions, rickettsia, fungi, parasites, recombinant DNA, or fresh/frozen tissues blood or body fluids from humans or other animals

In your Research Plan...

- Describe what Microorganisms will be used (unknown or specific strains)
- Describe what type of Containment is required (BSL-1 or BSL-2)
- Describe the supervision and safety protocols that will be used
- Describe how Microorganisms will be safely disposed of

On Forms 6A and 6B...

- Completely fill in and address each question in all Sections
- Have a Qualified Scientist and/or Direct Supervisor fill in Boxed Sections, and mark appropriate checkboxes
- Ensure that a Local or Affiliated Fair SRC signs and dates the appropriate Boxed Section on Form 6A BEFORE experimentation

Rules involving Unknown Microorganisms

- Samples that are collected from the environment, such as from skin, soil, surfaces, etc., are considered Unknown Microorganisms
- These can be considered BSL-1 studies if:
  - *Organisms are cultured in plastic petri dishes*
  - *After inoculation, the dish remains sealed until disposal (opening the plate for resampling elevates the study to BSL-2)*
  - *Disposal is done via autoclaving or appropriate disinfection methods*

ALWAYS Check Complete ISEF PHBA Rules!

https://www.societyforscience.org/isef/international-rules/potentially-hazardous-biological-agents/

Levels of Biological Containment

- BSL-1 - Containment normally found in High Schools, water-testing laboratories, and introductory college classes.
- BSL-2 - Containment typically found in hospitals and research facilities where there is moderate risk to humans and the environment.
- BSL-3 - Containment of serious and potentially lethal infectious diseases (**PROHIBITED**)
- BSL-4 - Containment of dangerous, exotic diseases of extremely high, life-threatening risk (**PROHIBITED**)

EXEMPT PHBA Studies That Do Not Require SRC Pre-approval

- Studies involving protists, archaea, E. coli OP-50, and K-12 E. coli (*with exceptions, see full rules*)
- Research using manure in composting, fuel production, or other non-culturing studies
- Studies using commercial coliform water test kits and microbial fuel cells (*if left sealed and properly disposed*)
- Studies involving decomposition of vertebrate organisms (*ie., forensics projects*)
- Studies involving fermentation of bakers/brewers yeast (*except in rDNA studies*)
- Studies involving specific strains of bacteria in their natural environment (not cultured on plates)
- Studies of mold growth on food if the experiment is ended at the first sign of mold growth
- Studies of slime molds and edible mushrooms
- Studies involving several Exempt Tissues (*see full rules*)

It is PROHIBITED to...

- Culture (grow) PHBAs in a home environment
- Participate in BSL-3 or BSL-4 research.
- Insert antibiotic-resistance traits or select for organisms expressing those traits into organisms that later may impact the ability to treat those organisms
- Select for multiple drug-resistant organisms in studies investigating antibiotic-resistance
- Participate in studies involving the use of Prions
- Culture recombinants containing DNA coding for human, plant, or animal toxins
- Introduce non-native, genetically altered, or invasive species, pathogens, toxic chemicals, or foreign substances into the environment
- Transport cultured PHBAs without proper containment and labeling, as per federal law

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