

# FIELD BIOSAFETY

Questions to Ask Before Working in the Field

# Field Biosafety

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- What are the risks of working out in the field?
- Discuss as a group and list them

# Field Biosafety - Risks

- ❑ Wild animals, arthropods, reptiles, carnivores, stampedes
- ❑ Heat or cold environments, access to drinking or clean water, vehicle troubles, political unrest, local individuals who are angry, criminal, or suspicious.
- ❑ Zoonoses, spread of animal diseases
- ❑ Boating, drowning, hazards related to tools or special equipment
- ❑ Weather hazards
- ❑ Medical issues amplified because of distance to treatment facilities
- ❑ Working alone

# Field Biosafety – Permits 01

- ❑ Collection of specimens (animal, plant, water, soil) may require a permit.
- ❑ Shipping and transport (Export and Import) of specimens may require a permit
- ❑ Storage of samples may require an inspection or permit.
- ❑ A word of caution; some permits may take several weeks to acquire.  
Investigate the need for permits well before you intend to collect, ship, or store research materials.
- ❑ Consult with EHS Shipping Section to determine if a permit is needed.

# Field Biosafety – Permits 02 - Collection

## □ Collection of Specimens

The type of permit required depends on the material collected and where it is collected. Some research materials in the USA may require both federal and state permits. Specimens collected outside the USA may also require a permit from the country of origin. Two examples of websites for collection of culture and scientific materials and plants are presented below

[https://www.michigan.gov/dnr/0,4570,7-350-79134\\_82777-452717--,00.html](https://www.michigan.gov/dnr/0,4570,7-350-79134_82777-452717--,00.html)

<https://www.fs.fed.us/wildflowers/ethics/permit.shtml>

# Field Biosafety – Permits 03 – Shipping/Transport

- Shipping and Transport (Import/Export)
- Shipping and transport, of specimens are dependent on the material and location and may require federal, state, and/or international permits.
- **Contact Yale EHS shipping for guidance.**

<https://ehs.yale.edu/research-materials-shipping>

<https://www.aphis.usda.gov/aphis/ourfocus/importexport>

<https://www.fws.gov/le/pdf/3-200-3a.pdf>

<https://www.cdc.gov/cpr/ipp/index.htm>

[https://ec.europa.eu/environment/cites/info\\_permits\\_en.htm](https://ec.europa.eu/environment/cites/info_permits_en.htm)

# Field Biosafety – Permits 04 - Storage

## ❑ Storage of Samples

- ❑ Federal permits may be required to store research materials, and storage locations may be subject to periodic inspections by federal or state authorities.

<https://www.aphis.usda.gov/aphis/ourfocus/importexport/organism-vectors>

- ❑ Yale University requires Investigators to keep detailed inventories of high-risk biological (HRB) agents such as “Select Agents”, human pathogens, toxins, and other hazardous biologics.

# Field Biosafety

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- What supplies to we need for conducting work in the field?
- Discuss and list

# Field Biosafety - Supplies

- Personal protective equipment (PPE)
  - ▣ Gloves, boots, gowns, face shields, lab coats, jump suits, respirators, safety glasses, goggles
  - ▣ Cut resistant gloves
- Disinfectant, antiseptic gel, antibiotic ointment
- Tarps, bags, small table
- Sharps containers, biohazard bags, buckets, trays

# Field Biosafety - Supplies

- ❑ Necropsy tools, Needles, syringes, medications
- ❑ Sample specimen containers, transport containers
- ❑ Cell phone, radios, first aid kits
- ❑ Towels, absorbent
- ❑ Extra set of clothing and shoes
- ❑ Other?

# Field Biosafety

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- What are the exposures we might face in the field?
- Discuss and list:

# Field Biosafety - Exposures

- ❑ Through skin
  - ▣ Bites, scratches, through open wounds, needle sticks
- ❑ Aerosols (Necropsy, splash, splatter)
- ❑ Facial mucous membranes
  - ▣ Touching eyes, nose, or mouth with contaminated hands
- ❑ Ingestion
  - ▣ Eating with contaminated hands, bringing contaminated personal clothing home to a vehicle, lab or office)
- ❑ Other?

# Field Biosafety

- What can be done to minimize or prevent exposure to zoonotic agents in the field?
- Discuss and list

# Field Biosafety – Minimizing Exposure

- ❑ Wear a uniform for field work, have work clothes laundered
- ❑ Wear clothing treated with insecticide and wear insect repellent
- ❑ Wear PPE over uniform or personal clothing
- ❑ Double glove, wear full face protection
- ❑ Decontaminate boots in disinfectant tray
- ❑ Don't eat, drink, or smoke while collecting samples.
- ❑ Wash hands with gel in field and with soap and running water at nearest hand washing sink
- ❑ Immunizations; endemic diseases and current boosters

# Field Biosafety – Minimizing Exposure

- ❑ Conduct a risk assessment for potential pathogens
  - ❑ Consult the Canadian Pathogen Safety Data Sheets
  - ❑ Know the symptoms
- ❑ Wear a respirator where aerosol risks are possible
- ❑ Be careful with sharps
- ❑ Keep the non-dominant hand away from blades
- ❑ Don't touch your face (eyes, nose or mouth)

# Field Biosafety – Minimizing Exposure

- ❑ Don't recap needles and syringes; discard in needle box immediately after use
- ❑ Remove contaminated clothing in field or decontaminate them before moving to vehicles, office, lab or home
- ❑ Have a change of clothing and shoes in the event of contamination

# Field Biosafety – Minimizing Exposure

- ❑ Take a shower back at lab after field work and before going home if potentially contaminated
- ❑ Launder personal clothing in hot water with detergent before reuse if contaminated
- ❑ Work in pairs when conducting necropsies or performing high risk procedures
- ❑ Evaluate areas for safety before starting work
- ❑ Other?

# Field Biosafety

- How should emergencies, such as exposures or incidents be dealt with in the field?
- Discuss and list

# Field Biosafety – Emergencies

- Have potable water to drink (hydrate) and to use to rinse eyes, nose or mouth if contaminated/exposed
- Washing cuts/needlesticks with antiseptic gel, soap and water immediately after an incident
- Bandages to cover wounds, antibiotic ointment
- Evacuation plan for serious injuries

# Field Biosafety - Emergencies

- Plan for moving injured staff to closest appropriate medical assistance
- CPR and First-Aid Training
- First Aid Kits
- Survival Kit: A kit for emergencies with special components allowing researchers to prevail in a harsh environment until a place of safety can be reached.

# Field Biosafety

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- Discuss and list other topics, suggestions or ideas for your field biosafety program