Bloodborne Pathogen Training
for Biomedical Researchers
OSHA Required Training
Office of Biological Safety
OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)
Training program shall contain at a minimum the following elements:
(g)(2)(vii)(A);
An accessible copy of the regulatory text of this standard and an explanation of its contents
Bloodborne Pathogens

- Pathogenic microorganisms present in human blood and can cause disease in humans
- Including (but not limited to):
  - Hepatitis B virus (HBV)
  - Hepatitis C virus (HCV)
  - Human immunodeficiency virus (HIV)

(g)(2)(vii)(A)
An accessible copy of the regulatory text of this standard and an explanation of its contents;
### Epidemiology and Symptoms of BBP Disease

<table>
<thead>
<tr>
<th>Hepatitis B Virus (HBV)</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Causes serious liver disease</td>
<td>- Jaundice</td>
</tr>
<tr>
<td>- 10% of infected people become chronically infected</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>- Transmitted by:</td>
<td>- Abdominal pain</td>
</tr>
<tr>
<td>- Blood (puncture wounds, needle sharing)</td>
<td>- Joint pain</td>
</tr>
<tr>
<td>- Contact with mucous membranes</td>
<td>- Loss of appetite</td>
</tr>
<tr>
<td>- Sexual contact</td>
<td>- Nausea</td>
</tr>
<tr>
<td>- Vaccine available: Greatly reduced incidences among clinical and research personnel</td>
<td>- Vomiting</td>
</tr>
<tr>
<td></td>
<td>- About 50% of infected people are asymptomatic</td>
</tr>
</tbody>
</table>

**OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens**

(g)(2)(vii)(B)

A general explanation of the epidemiology and symptoms of bloodborne diseases;
# Epidemiology and Symptoms of BBP Disease

<table>
<thead>
<tr>
<th>Hepatitis C Virus (HCV)</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Causes serious liver disease</td>
<td>– Most common symptom:</td>
</tr>
<tr>
<td>– 85% of infected people become chronically infected</td>
<td>Extreme tiredness</td>
</tr>
<tr>
<td>– Annually, up to 10,000 people die from hepatitis C related chronic liver disease</td>
<td>“flu-like” symptoms: muscle and joint pain, nausea, loss of appetite,</td>
</tr>
<tr>
<td>– No vaccine available</td>
<td>mild stomach pain</td>
</tr>
<tr>
<td></td>
<td>– About 75% of people infected have no symptoms at all</td>
</tr>
</tbody>
</table>

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens  
(g)(2)(vii)(B)  
A general explanation of the epidemiology and symptoms of bloodborne diseases;
Epidemiology and Symptoms of BBP Disease

<table>
<thead>
<tr>
<th>Human Immunodeficiency Virus (HIV)</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attacks immune system</td>
<td>&quot;Flu-like&quot; symptoms may occur during acute HIV syndrome but could be associated with other infection</td>
</tr>
<tr>
<td>Transmitted by direct contact with blood or mucous membranes</td>
<td>Symptoms may take years to appear</td>
</tr>
<tr>
<td>NOT transmitted by casual contact (drinking fountains, hugging, kissing, etc.)</td>
<td>Best way to find out is to get tested</td>
</tr>
<tr>
<td>Number of HIV-infected people who develop serious illness and die from AIDS has decreased due to treatments</td>
<td></td>
</tr>
<tr>
<td>No vaccine available</td>
<td></td>
</tr>
</tbody>
</table>

A general explanation of the epidemiology and symptoms of bloodborne diseases;
Transmission of BBP Disease

- Bloodborne Pathogen Exposures
  - Puncture from a contaminated sharp object
  - Blood, human cells (primary or cell line), or OPIM (other potentially infectious material) splash to broken skin or mucous membrane of your eyes, nose, or mouth
- OPIM includes: tissue, semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluids, saliva in dental procedures, and any other body fluid visibly contaminated with blood

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(C)
An explanation of the modes of transmission of bloodborne pathogens;
Exposure Control Program

- The Exposure Control Program
  - Designed to eliminate or minimize employee exposure to BBP
- EHS link to Exposure Control Program
  - Outlines roles and responsibilities of EHS, Principal Investigators, University of Chicago Occupational Medicine, and employees

**OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens**
(g)(2)(vii)(D)
An explanation of the employer’s exposure control plan and the means by which the employee can obtain a copy of the written plan;
Exposure Control Program

- Use **Universal Precautions**
  - Assume any human-derived product is infectious
- Engineering controls: Reduce exposure by isolating worker from exposure
  - Use BSC to protect against inhalation of BBP
  - Re-sheathable needles to decrease needlestick risk
  - “Sharps” disposal containers at point of use
  - Secondary leak proof containers during transportation to prevent spills

**OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens**

(g)(2)(vii)(E)

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

**Work Practice Controls: Practices to Decrease Risk of BBP Contamination**

- Wear gloves whenever handling human-derived material
- Proper handling/disposal of material previously in contact with blood or OPIM (bandages, sharps, pipette tips, etc.)
- Place contaminated sharps (needles, scalpels, etc.) in designated sharps container immediately
- Minimize splashing when working with blood or OPIM
- Wash hands after any job involving blood or OPIM


An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Work Practice Controls: Practices to Decrease Risk of BBP Contamination

- Use eyewash and/or safety shower if needed after contact
- Never recap, bend, or remove needles from syringe
- No food, drink, smoking, applying cosmetics, or handling contact lenses
- No food/drink stored in areas where work is occurring
- No blood or OPIM stored outside of authorized lab areas

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

**Housekeeping**

- Keep worksite clean and sanitary
- Keep schedule of cleaning and decontamination procedures nearby
  - After completion of procedure
  - When surfaces are overtly contaminated
  - After spill of blood or OPIM
  - At the end of the day

**OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens**

(g)(2)(vii)(E)

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

Housekeeping
• Disinfectant
  – 10% bleach
  – Other EPA-registered antimicrobials:
    • http://www.epa.gov/oppad001/chemregindex.htm
• Containers:
  – Decontaminate reusable bins, pails, cans, etc.
  – Use something other than your hand to handle broken glass
OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Waste Disposal

• For pick-up of BBP waste:
  – Most labs working at BL2 dispose their BBP waste with their biohazardous waste
  – If you need additional waste pick-up, contact the facility manager
  – Medical Center: Environmental Services (2-6296 from campus)

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

**Exposure Control Program**

**Spill Response**
Don’t attempt to clean spill if:
- You don’t know what is in it
- It’s an inhalation hazard
- If it’s more than 1 liter (about a quart)
- Call UC police at 123 from campus phone or 773-702-8181

Otherwise...
- Warn workers near the spill
- Wear PPE: Gloves, apron, goggles, and mask
- Pour or mist 10% bleach over entire area and cover with paper towels; Allow 30 minutes of contact time
Exposure Control Program

Spill Response

• Pick up towels walking toward center of spill
• Dispose into plastic liner, then into a reusable container
• If broken glass/sharps: use device (brush, dustpan, etc.)
• Remove PPE and dispose into plastic liner
• Close liners and containers and wash hands, arms, face
• Notify supervisor ASAP
• Contact facility manager for pick-up and disposal

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities
that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

**Personal Protective Equipment (PPE)**
Discuss proper PPE for use with blood/OPIM with supervisor, EHS, or Biosafety
- PPE must be supplied in the appropriate size and free of charge
- Required for working with BBP
- PPE for BSL2 or higher should be sufficient for BBP work

**OSHA Regulations:** 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Personal Protective Equipment (PPE)

- Eye protection
  - Goggles or face shields
  - Wear if you’re likely to generate splashes, spray, spatter, or droplets of blood/OPIM
- Gowns/lab coats:
  - Wear during use with blood/OPIM
  - REMOVE before exiting work area
- Mucous membrane protection: In absence of BSC
- Surgical cap/shoe covers: Not necessary unless gross contamination is expected
- Either be disposed of or decontaminated before re-use

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Hepatitis B Vaccine

- All UC employees who have potential for exposure to BBP are eligible to receive HBV vaccine for free
- >90% of people vaccinated develop immunity to HBV
- Three injections in the arm over the course of 6 months
  - 0, 1, and 6 months: All three must be given for full effect
  - Noninfectious yeast-based vaccine
  - Not recommended for people with allergies to baker’s yeast
- Vaccine is not harmful if you’re already immune to HBV

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Hepatitis B Vaccine

- Declining the HBV Vaccine
  - If you decline, you must fill out a declination form
  - Kept on file with EHS
  - You may change your mind after filling out declination form
- Currently: Booster dose not recommended
  - If it ever is recommended you can get a booster for free
- HBV Vaccine form distributed at end of training today
- For more info:

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens (g)(2)(vii)(E) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

**Post-Exposure Evaluation**
- Exposure: Any direct contact with blood/OPIM at work
- Exposure incidents: Needlestick, splash in the eye, etc.
  - Must receive confidential medical evaluation from licensed health care professional w/ appropriate follow-up
  - Workers in the Select Agent Program must notify supervisor of any possible exposure (BBP, OPIM, select agent, etc.)
- Immediately after exposure:
  - Flush area (or eyes) w/ water for 15-20 minutes
  - Report to your supervisor
  - Seek medical treatment within an hour

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Post-Exposure Evaluation

UC EMPLOYEES with an exposure on the job:

– Report to your supervisor or Human Resources Administrator
– Contact the blood borne pathogen pager (188-9990) and wait for further healthcare instructions
– Supervisor completes “Request for Evaluation and Treatment – Work Related Illness or Injury WC Form 100” and “Supervisor’s First Report – Workers’ Compensation Claim of Injury/Illness.”
– Then provides you with: “Employee Statement of Injury or Illness – Workers’ Compensation” for you to complete

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Post-Exposure Evaluation

UC EMPLOYEES injured on the job:

- Take originals of all three documents to UCOM or the Adult Emergency Room at Mitchell Hospital
- Always use the “buddy system”
- If you can’t get there by yourself or with assistance:
  - At Hyde Park: Call UC Police (123 from campus or 2-8181) and ask for ambulance
  - At HTRL: Call 911

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Post-Exposure Evaluation
If you have an exposure on the job and not on campus:
   – Follow the previous instructions, AND...
     • Notify the ER that it is work related and you are a UC employee so they bill UC
     • If you are billed by the ER, forward the bills to Human Resources – Absence Management

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
Exposure Control Program

Post-Exposure Evaluation
UC Students with an exposure on the job
• Follow previous procedures, but go to Student Care Center
  – Albert Merritt Billings; 5841 S. Maryland Ave; Ste R100;
    773-702-4156; 8:00 AM – 5:00 PM
  – If after hours, go to Adult Emergency Room

OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities
that may involve exposure to blood and other potentially infectious materials;
OSHA Regulations: 29 CFR 1910.1030 Bloodborne Pathogens
(g)(2)(vii)(M)
An explanation of the signs and labels and/or color coding required by paragraph (g)(1);
Office of Biological Safety

QUESTIONS??

Call or Visit!

- Abbott 120
- Joe Kanabrocki: 4-7496
- Allen Helm: 4-6756