PROTECTING YOURSELF
WHILE PROTECTING YOUR COLLECTIONS

ON TODAY’S AGENDA

- Dangers found in collections
- How to identify hazardous materials
- Risk management
- Personal protective equipment
- Questions

YOUR HEALTH AND SAFETY IS MORE IMPORTANT THAN ANY OBJECT.
The Most Important Thing
WHAT ARE HAZARDOUS COLLECTION MATERIALS?

- Any material that has the potential to cause injury, illness or death; cause damage or loss; or inhibit operations

INHERENT HAZARDS

- These are hazardous at the time of manufacture, and remain so over time.
  - Arsenic in taxidermy mounts
  - Poison tips on arrows used as weapons
  - Carbon tetrachloride in early fire extinguishing equipment
  - Mercury in thermometers or 19th century mirrors
  - Lead in bullets, stained glass, or glazed ceramics
  - Pathogens or parasites in medical equipment and odd specimens
  - Physical characteristics, such as sharp bristles or spikes
  - Etc. - The list goes on and on and on

ACQUIRED HAZARDS

- These become added to the object over time
  - Pesticides
  - Preservatives like formaldehyde and ethanol
  - Deterioration of object (cellulose nitrate film, for example)
  - Environmental contaminants like mold, frass, and bird droppings
HOW DOES THE BODY ABSORB TOXINS?

- Skin contact
- Inhalation
- Ingestion

THERE IS A DIFFERENCE BETWEEN A HAZARD AND A RISK.

Now that you’re sufficiently terrified...

HOW DO WE IDENTIFY HAZARDS?

- Knowledge of the material
  - You know if you smell vinegar around film that you have acetic acid
  - You know that taxidermy used arsenic as a preservative
  - You know that if you acquire a firearm you should assume it is loaded and dangerous
  - Sometimes arsenic manifests as a white powder on organic materials
HOW DO WE IDENTIFY HAZARDS?

- Historical records
  - Does your museum keep records on pesticides used?
  - Are there notes that come with a donated object that lead you to suspect treatment with a pesticide?
  - Does a brand name contain “Rad” or “Radi”?

- Understand your environment
  - Are there spaces that are prone to mold or pest invasion?
  - Do you have asbestos in your ceilings or walls?
  - How about lead paint?

- Chemical testing
  - Spot testing
  - Some require sophisticated equipment

- All testing should be performed by a trained conservator
  - Midwest Art Conservation Center offers inexpensive arsenic testing
SIGNS OF PESTICIDE USE

- Excellent condition compared to similar items of the same age, materials and storage conditions
- Marked or labeled with a poison tag
- Fine white dust
- Crystals or colored efflorescence
- Better safe than sorry- suspect anything you can’t easily identify

- Dining for American Indian Oceans – The Issue of Pesticide Consumption – Nancy Dejard

LOCAL ENVIRONMENTAL SAFETY AGENCY
OSHA SMALL BUSINESS CONSULTATION SERVICE
HTTPS://WWW.OSHA.GOV/DCSP/SMALLBUSINESS/CONSULT.HTML

Need Help?

KEY RISK MANAGEMENT STRATEGIES

- Remove and replace affected object
- Isolate the object
- Use safe work practices
REMOVE AND REPLACE

- Dispose of the contaminated object
- Remediate the contaminant
- Process quickly to lessen risk of cross-contamination
- Dispose of hazardous waste in accordance with local regulations

ISOLATE

- Use well-sealed bags or containers
- In drawers under acrylic

SAFE WORK PRACTICES

- Good housekeeping and hygiene
- Documentation
- Personal protective equipment
HOUSEKEEPING

- Good housekeeping practices include:
  - Minimizing dust and particulate material
  - Cleaning storage containers if they will be reused
  - Covering work surfaces with removable and disposable materials
  - Segregating hazardous materials from non-hazardous
  - Moving objects in closed containers
  - Minimizing handling
  - Designing protocols to minimize risk to humans

HYGIENE

- No smoking
- No eating or drinking in workspaces
- Wash hands frequently
- Don’t touch your face

DOCUMENTATION

- Use to alert staff and visitors about hazards
- Warning signs on objects, storage containers and entrances to storage areas
- Make notes in catalog records
GET THE MSDS

- MSDS - Manufacturer's Safety Data Sheet
- Contains vital safety information for chemicals, solvents and other toxic substances
- Keep on file for all potentially hazardous substances you purchase

VACCINES

- All staff members working with collections should have a current tetanus vaccine.
- Update the vaccine every 10 years
- Hepatitis A and B vaccines are useful for working in emergency situations

PERSONAL PROTECTIVE EQUIPMENT

- Should be selected to match the hazard but may include:
  - Respirators
  - Gloves
  - Safety goggles
  - Ear protection
  - Protective clothing like Tyvek suits or lab coats
GLOVES

- Nitrile are usually preferred over latex
- When working with chemicals, check glove usage charts
- Color of nitrile not usually a consideration for museum work

WHITE COTTON GLOVES PROVIDE NO PROTECTION AT ALL.

While we’re on the subject...

GLOVE USAGE

- Check for punctures, tears or other signs of deterioration after you put them on
- Remove and replace when damaged or splashed with chemicals
- Never reuse disposable gloves
- Take gloves off inside out and dispose of them correctly
- Do not wear contaminated gloves when touching things like desk telephones, elevator buttons, doorknobs, etc.
LAB COATS/TYVEK SUITS

- Can be very useful when dealing with particulates
- Lab coats can be washed
- Tyvek suits are disposable

RESPIRATORS

- Air-purifying respirator
  - A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
  - (OSHA Standard 1910.134)

WHEN IS A RESPIRATOR IMPORTANT?

- Whenever an inhaled hazard is present
  - Mold
  - Solvent vapors
  - Acids from deteriorating film
  - Asbestos
  - Lead
  - Arsenic
  - Etc.
DISPOSABLE RESPIRATORS

- Appropriate with particulate contaminants like mold, dust, residues of pesticides
- Not appropriate for gasses or vapors
- Require fit testing to make sure you’re using appropriately

TYPES OF NON-DISPOSABLE RESPIRATORS

- Half Mask
  - Elastomer
  - Disposable
- Full Face
- Must be NIOSH approved

CARTRIDGES

- P100 suitable for most museum applications
- Filters are also available for gas and vapors
WHO CAN WEAR A RESPIRATOR?

- You can wear a respirator if you have:
  - Passed a medical evaluation
  - Are clean-shaven
  - Have been trained in use and care
  - Have been fit tested

FIT TESTING

- Fit testing should be done annually
- Contact local OSHA office for advice on someone who can perform testing or purchase kit yourself
- 3M has inexpensive online medical evaluation http://solutions.3m.com/wps/portal/3M/en_US/3M-PPE-Safety-Solutions/Personal-Protective-Equipment/safety-management/safety-programs/OnlineRespiratorMedicalEvaluations/

THANK YOU!

- Let’s stay in touch!
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