

A construction site under a clear blue sky. A large green crane is positioned on the left, with a load suspended from its hook. In the foreground, several workers wearing bright yellow-green safety vests and white hard hats are visible. The vests feature the 'HARBRO' logo. The background shows the skeletal structure of a building under construction, with blue safety netting on some parts. A semi-transparent white banner is overlaid across the middle of the image, containing the main title and logo.

# Mold Awareness & Remediation: *A Common Sense Approach*

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# About This Session ...

- **BE INTERACTIVE!!**
  - Share ideas.
  - Share challenges.
  - There is more than one right answer!



# IICRC

“Institute of Inspection Cleaning & Restoration Certification”

The screenshot shows a web browser window displaying the IICRC website. The address bar shows the URL <http://iicrc.org/>. The browser's address bar also shows search engines like Yahoo! and Google, and a search bar with the text "Carpet Cleaning Re...". The website's navigation menu includes links for Home, Contact Us, Certified Firm Login, and IICRC Store. The main content area features the IICRC logo, which consists of a globe made of green dots, and the text "IICRC Institute of Inspection Cleaning and Restoration Certification". Below the logo, there are regional selection buttons for USA, Europe, and Oceania. A search bar with a "SEARCH" button is also present. The website's main navigation bar is green and contains the following links: For Consumers, Education & Certification, Standards, For Registrants, IICRC Benefit, About Us, and Locate a Certified Professional. The main content area has a large image of a man in a white shirt looking at a carpet. To the left of the image, there is a "Welcome to the IICRC" section with a brief description of the organization. The description states: "The IICRC is a certification and standard-setting non-profit organization for the inspection, cleaning and restoration industries. In partnership with regional and international trade associates, the IICRC serves more than 25 countries with offices in the United States, Canada, United Kingdom, Australia, New Zealand and Japan." The browser's taskbar at the bottom shows various application icons and the system clock indicating the time is 12:04 PM on 6/14/2013.

Regions: [USA](#) Europe Oceania

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**IICRC**  
Institute of Inspection Cleaning  
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**Welcome to the IICRC**

The IICRC is a certification and standard-setting non-profit organization for the inspection, cleaning and restoration industries. In partnership with regional and international trade associates, the IICRC serves more than 25 countries with offices in the United States, Canada, United Kingdom, Australia, New Zealand and Japan.

12:04 PM  
6/14/2013

# Why are THEY so freaked out about mold?

- Potential Illness
- Heightened Awareness of Health Issues
- People Vacated Homes
- Lost Work Hours for Sick Time
- Fear of the Unknown



# Facility Professional Mold Concerns



- **Loss of Reputation**
- **Decreased Revenue**
- **Fines and Lawsuits**
- **Media frenzy vs. business interests**

# Mold and the Media

- Controversial topic within the industry
  - 1993 NYC Guidelines
  - Texas Lawsuits
  - HO Policy Changes
  - GL Policy Changes
  - High Profile Cases: Erin Brockavich, Ed McMahon



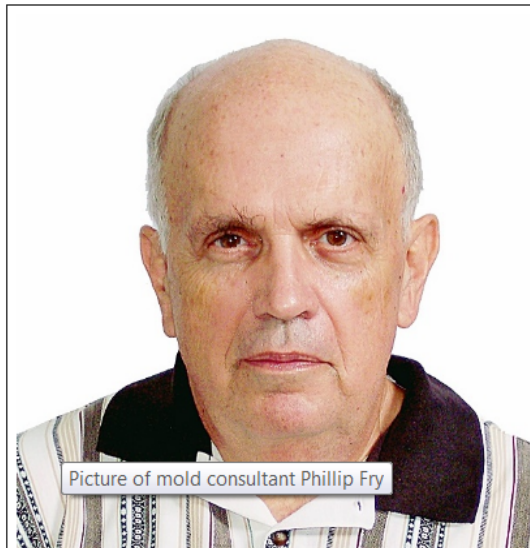
Hire [mold consultants](#) Phillip Fry and Divine Montero to find [air conditioning mold](#), [workplace mold](#), and mold hidden inside the walls, floors, crawl space, attic, and basement of your house, condominium, office, or other building. [Mold Attorney](#)  
[Mold Training](#) [Mold Inspector Directory](#) [Industrial Hygienist Training](#) [Industrial Hygienist Directory](#) [Building Mold Inspection](#)

**Also please read:**

- [\[Hospital Mold Remediation\]](#)
- [\[Mold in Hospital Water\]](#)
- [\[Hospital-Mold-Health-Symptoms\]](#)
- [\[Hospital-Mold-News\]](#) [\[Hospital-Mold-Website-Links\]](#)

## Hospital, Nursing Home, Extended Care Facility, and Senior Housing Toxic Mold Inspection, Testing, Removal, and Remediation

Protect your employees, patients, residents, and visitors by solving your hospital, nursing home, extended care facility, or senior housing toxic mold problems safely, effectively and affordably. Please read [hospital mold remediation](#) and [mold in hospital water](#).



Picture of mold consultant Phillip Fry

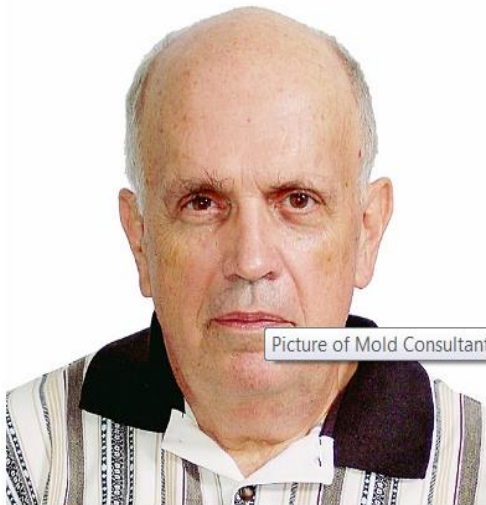
[Mold Expert Phillip Fry](#) is the author of 5 mold articles that are only \$:15 each, delivered by email attachment.

remediation work area and thus cross-contaminating other building areas, and failure to do clearance mold testing after mold remediation.

**"If a house, condo, or other building for sale has had a leaky roof, plumbing leaks, siding leaks, a flooded basement or dampness, water problems, mold anywhere inside or outside the home or building, previous water damage restoration, and/or mold remediation or mold removal, those present and past water and mold problems must be disclosed in writing in advance by the real estate seller to prospective buyers," warns Phillip Fry, [mold consultant](#) and author of the ebook [Mold Legal Guide](#). [Read more...](#)**

"No one gets out of these disclosures: Even those marketing a home "as is" have to obey state disclosure laws," says Ilona Bray, real-estate attorney and co-author of "[Nolo's Essential Guide to Buying Your First Home](#)." "As-is sellers are simply advertising that they're not going to negotiate on price because of these issues." Read [Six Disclosures that Sellers Must Make To Buyers](#). [Read more...](#)

- ▶ "[Ten Steps to Avoid Mold Legal Claims and Mold Lawsuits](#) in the Rental of Residential and Commercial Real Estate" by [mold expert](#) Phillip Fry.
- ▶ "[Ten Tips To Avoid Real Estate Sale Mold Lawsuits](#)" by [mold consultant](#) Phillip Fry.
- ▶ [What Real Estate Sellers Must Disclose to Buyers](#) About Present and Past Water Damage and Mold Problems by [mold expert](#) Phillip Fry.
- ▶ [California Workplace Mold](#): Monterey County, California, Fraud Unit Workers Claim Mold In The District Attorney's Office Made Them Sick, Oct. 8, 2012



Picture of Mold Consultant Phillip Fry

[Mold Consultant](#) Phillip Fry, author of five mold advice ebooks available at [Mold Mart](#).

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10/31/2012



# Is it Mold?

## Risk Management Thoughts?

### Legal “Nicknames”

#### – AMG

- Amplified Microbial Growth
- Apparent Microbial Growth

#### – BOG

- Bio Organic Growth

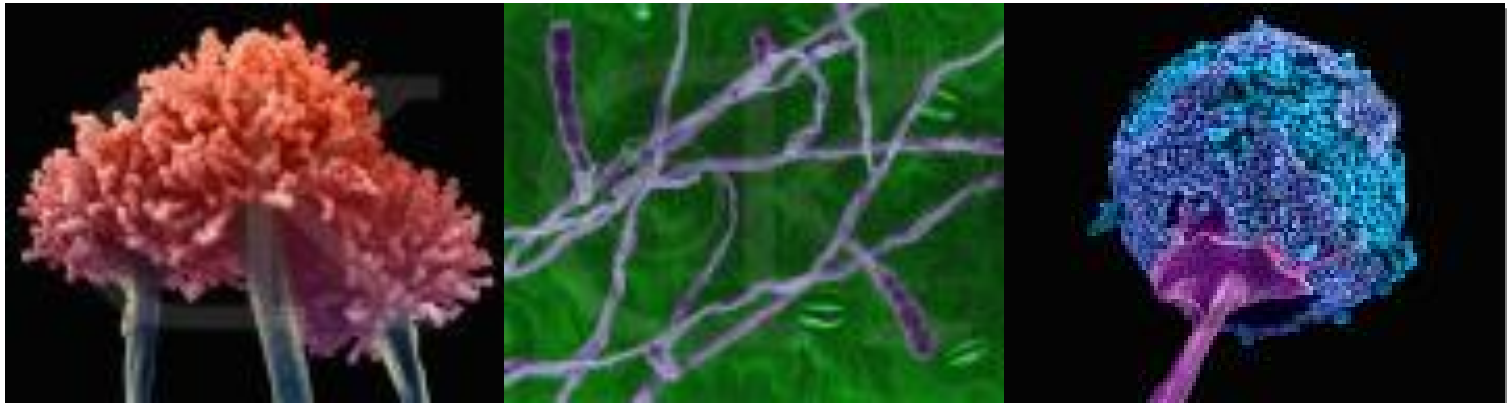
### Insurance Claims

- Coverage?
- Limitations?



# Fungus and Mold

- Fungus is a microscopic substance that exists in the air around us all the time. It is neither plant nor animal---it's a separate type of living organism that occupies its own kingdom of classification.
- Mold is one type of fungus. It is virtually invisible to the naked eye. When multiple mold spores grow close together they become visible as they spread rapidly across a surface.



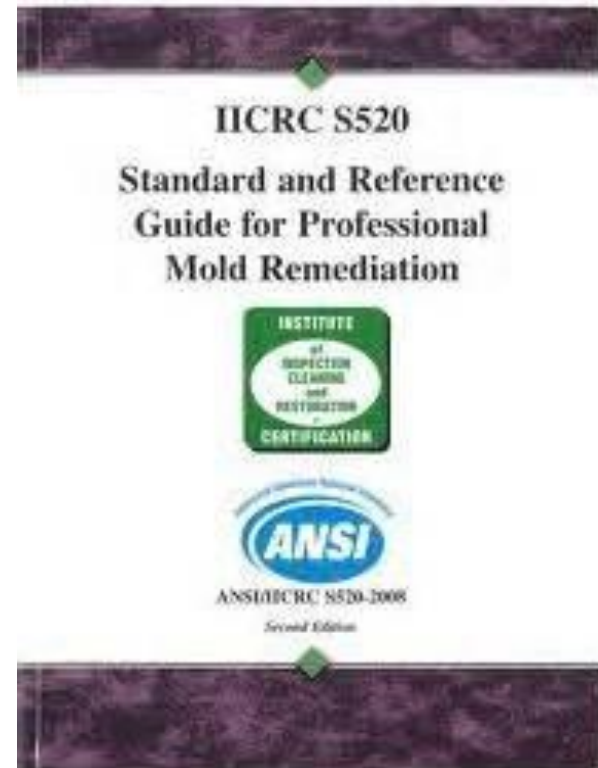


**MOLD ARMOR. Mold Test Kit**  
**Area** Yvonne Desk  
**Sample #** \_\_\_\_\_ J4524

# Mold is everywhere!

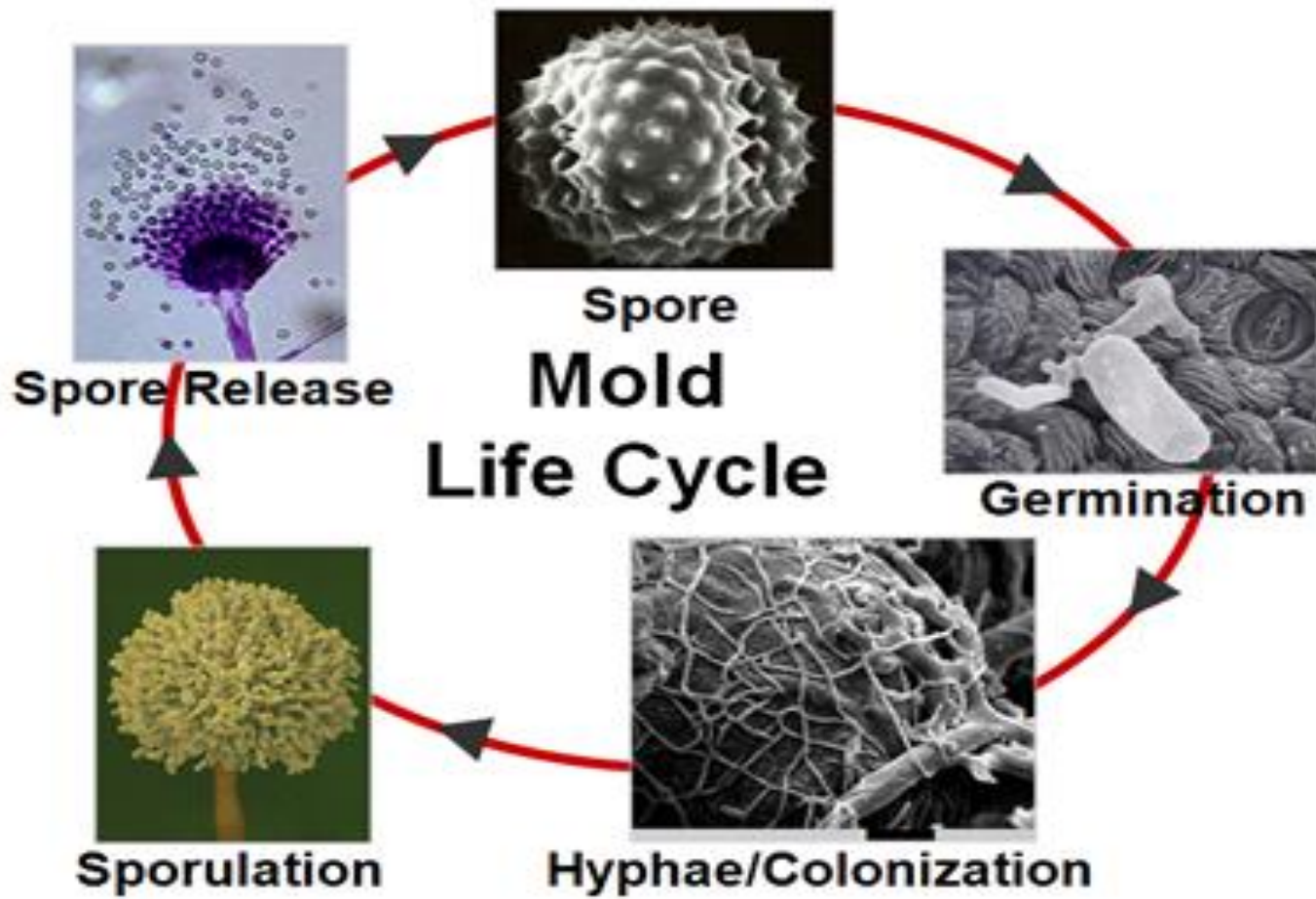
## IICRC S-520

- **Condition 1**
  - Normal mold spores
- **Condition 2**
  - Contaminated with settled spores
- **Condition 3**
  - Active mold growth on surfaces



# Types of Fungus & Mold

- **Mold is ONE of more than 200,000 types of fungus**
- **There are more than 100,000 types of mold.**
- **Allergenic:** Unlikely to cause illness
- **Pathogenic:** Can cause infection or illness
- **Toxigenic:** Toxic to all
- **Beneficial: Penicillin, Blue Cheese, Chocolate, Mushrooms, Truffles**



# How Does Mold Become a Problem?



- When Mold grows indoors due to water intrusion and the mold spores increase and become airborne .
- When Mold and/or Moldy materials are improperly removed.



# Mold Can Affect Our Health

- **Most common: Spores are inhaled**
  - Creates symptoms that mimic colds, flu's and allergies
  - Allergic reactions, infections
  - Irritations to skin, mucous membranes
- **Very young, elderly, immune suppressed**





# When should you investigate for mold?



- **Common and tenant areas and inspections**
  - When you see visible growth
  - When you smell musty odors
  - When wall or floor has dark spots or patches that reoccur
  - When dealing with a moisture intrusion issue(s)
    - Long term or Short term

***What about “health complaints” from residents or others?***

# “Health” Complaints



- Corporate Policy?
- Documentation is ok.
- Doctoring is NOT!
  - Stay with your expertise
  - Investigate the space
  - Document your findings

# What is an Industrial Hygienist?

- Industrial Hygiene is the science that deals with the anticipation and control of unhealthy conditions in workplaces in order to prevent illness among employees.
  - Is your IH a mold expert?
  - When to retain a hygienist?
    - Corporate Policy
    - Liability protection
    - Large or complex situations
  - What will the hygienist do?
    - Testing
    - Protocol
    - Clearance



# How does mold grow?

Spores (seeds)

Everywhere

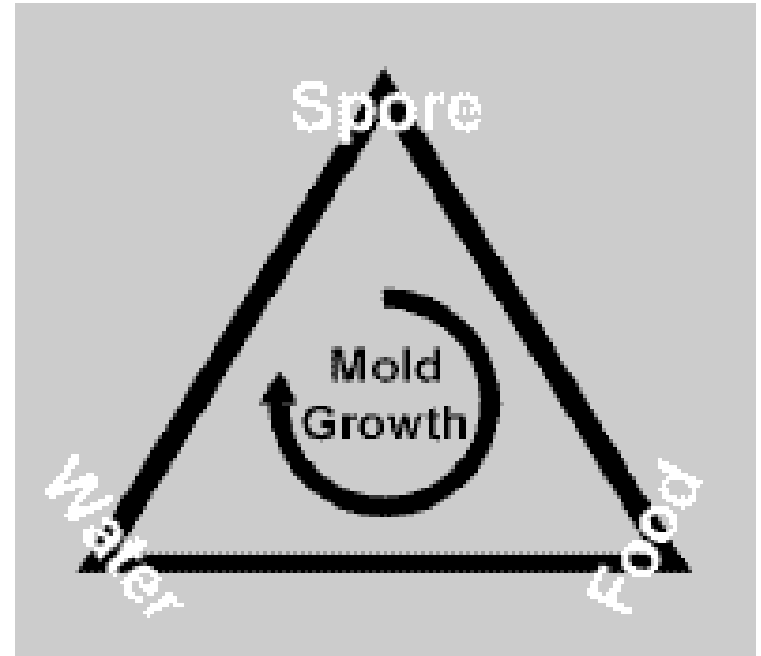
Food

Organic materials

ceiling tiles, drywall, carpet,  
wood, dust, etc.

Water

Relative humidity,  
generally above 60% Rh



***Temperature, generally above 60° F***

# Mold issue = Moisture Problem

The screenshot shows a web browser window displaying the EPA website. The address bar shows the URL <http://www.epa.gov/mold/index.html>. The page features the EPA logo and navigation tabs for 'LEARN THE ISSUES', 'SCIENCE & TECHNOLOGY', 'LAWS & REGULATIONS', and 'ABOUT EPA'. The main content area is titled 'Molds and Moisture' and includes a large blue banner with the text 'The Key to Mold Control is Moisture Control' and 'If mold is a problem in your home or school, you must clean up the mold and eliminate sources of moisture.' A 'Learn more' button is located at the bottom right of the banner. Below the banner is a 'Quick Finder' section with links to 'Mold Basics', 'Mold Cleanup', 'Cleanup Guidelines', 'Hidden Mold', 'Mold Image Library', 'Introduction to Mold', 'Mold Course', 'Prevention and Control Tips', 'What to Wear When Cleaning Mold', and 'Flood Cleanup Español Indoor Air Quality'. On the right side, there is a 'Top Three Questions/Tasks' section with a list of three questions: '1. Should I use bleach to clean up mold?', '2. How can I tell if I have a mold problem?', and '3. What are the basic mold cleanup steps?'. Below this is a section for 'Natural Disasters and Weather Emergencies' with links to 'Information on Flood Cleanup', 'EPA's Natural Disasters and Weather Emergencies', and 'Emergency Preparedness at http://www.ready.gov/'. The browser's taskbar at the bottom shows the time as 11:34 AM on 3/19/2013.

**EPA** United States Environmental Protection Agency

Advanced Search [A-Z Index](#)

LEARN THE ISSUES SCIENCE & TECHNOLOGY LAWS & REGULATIONS ABOUT EPA

**Molds and Moisture** [Contact Us](#) [Share](#)

**The Key to Mold Control is Moisture Control**

If mold is a problem in your home or school, you must clean up the mold and eliminate sources of moisture.

[Learn more](#)

**Quick Finder**

Mold Basics	Hidden Mold	Mold Course	Flood Cleanup
Mold Cleanup	Mold Image Library	Prevention and Control Tips	Español
Cleanup Guidelines	Introduction to Mold	What to Wear When Cleaning Mold	Indoor Air Quality

**Top Three Questions/Tasks**

1. Should I use bleach to clean up mold?
2. How can I tell if I have a mold problem?
3. What are the basic mold cleanup steps?

[Additional Questions on Mold.](#)  
[Questions on Indoor Air Quality](#)

**Natural Disasters and Weather Emergencies**

[Information on Flood Cleanup](#)  
[EPA's Natural Disasters and Weather Emergencies](#)  
[Emergency Preparedness at http://www.ready.gov/](#)

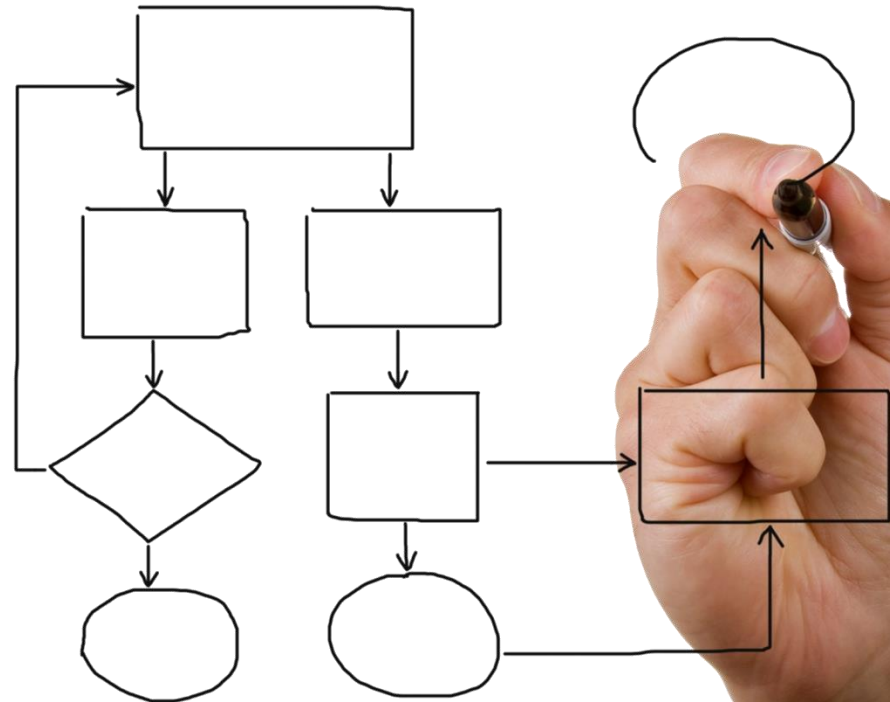
If mold is a problem in your home, clean up the mold and get rid of the excess water or moisture. Fix leaky plumbing or other sources of water. Wash mold off hard surfaces

11:34 AM  
3/19/2013

# Learn the process!

## Water Damage Protocol...*EVERY TIME!*

- 1) Initial assessment (Safety First...then extent)
- 2) Identify and control the moisture source
- 3) Move contents from affected area
- 4) EXTRACT!!!
- 5) Access the damage to facilitate drying  
Asbestos?  
Carpet and/or pad  
Drywall
- 6) Deploy drying equipment
- 7) Monitor the drying process
- 8) Initiate reconstruction process



# Safety First!

- SAFETY ASSESSMENT FIRST!
  - Electrical?
  - Sewage?
  - Collapse?
- Keep out!
  - General Public
  - Employees
  - Renegade Do Gooders!
- Who is allowed in?



# Initial Inspection of the Environment

- **Determine water migration and saturation: *Do the math!***
  - How long was water running?
  - What was source?
  - Type of construction?





# Stop the Loss From Continuing

- If SAFE TO DO SO!!
- If leak, isolate and turn off
  - If unable, find way to divert or minimize
- Other Losses
  - Seek to achieve stabilization...stop the bleeding!
  - What can be done ASAP to reduce the impact of the loss!
  - **Seek the greater good!**



# Where do you want the water?

- Team decision
- Decide now
- Communicate it now



# Categories of Water Damage

[www.iicrc.org](http://www.iicrc.org)

- Category 1: Water line to plumbing fixture, toilet overflow (no materials in water)
- Category 2: Dishwasher, clothes washer, toilet over flow with paper, *no feces*
- Category 3: Sewage, seawater, stream or river over flow



# Control the spread of water

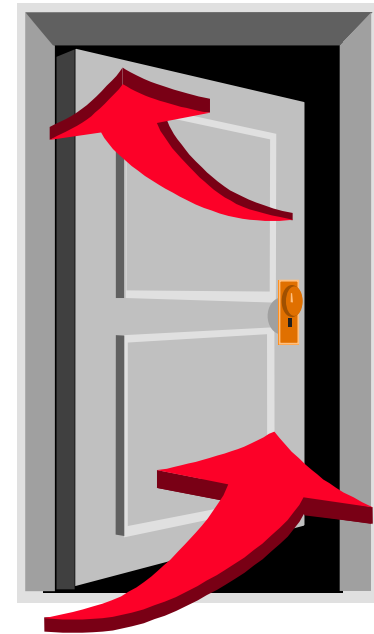
- **Determine most effective method of removing the water**
  - Mopping
  - Drain diversion
  - Shop vacuum
  - Pumping
  - Extraction
- **Extraction is 1200 times faster than dehumidification per job!**



# Open Drying System

- Uses existing environment conditions to achieve a balanced drying system

**Humidity Seeks an Equilibrium**



# What is wet?

- 16% - 19%
  - Non-wood destroying fungus develops
- 20% - 29%
  - Dry rot develops
- 30% and higher
  - Wet rot develops



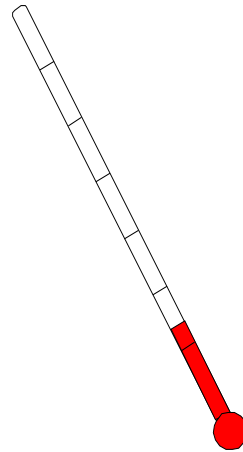
# After the physical extraction of water; evaporation is the only remaining way to remove unwanted water!

Rate of evaporation is determined by:

*Air movement*



*Temperature*

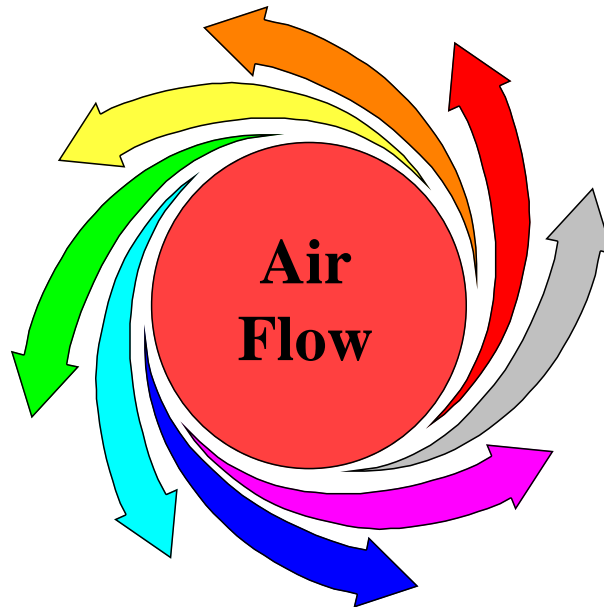


*Humidity Control*



# Air Movers

- Airflow on all wet items
- One unit per 10 – 14 feet
- Increase the rate of evaporation

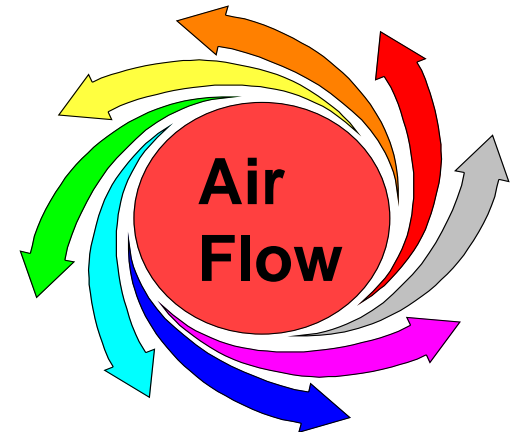




# Air Mover Challenges

- **Pre-cautions for use of Air Movers**

- Can create more water evaporation than dehumidifiers can remove creating “Secondary Damages”.
- The air movers can blow dirt and dust throughout the structure.
- Air movers are NOT to be used when suspected mold, asbestos or other environmental hazards are present!



# Dehumidifiers

- **Refrigerant type**
  - Will reduce moisture levels to 55 – 60 gpp
  - Most commonly used due to cost
- **Low Grain Refrigerants - LGR**
  - Air entering unit is pre-cooled for more efficient drying
  - Moisture levels to 32 – 35 gpp
- **Desiccant Technology**
  - Moisture levels to 10 – 15 gpp
  - Can operate down to 32° F



# Closed Drying Systems

- ***Deciding Factors:***
  - Greater control
  - Relative humidity over 40%
  - Valuable materials protected

**Most Widely Used System**



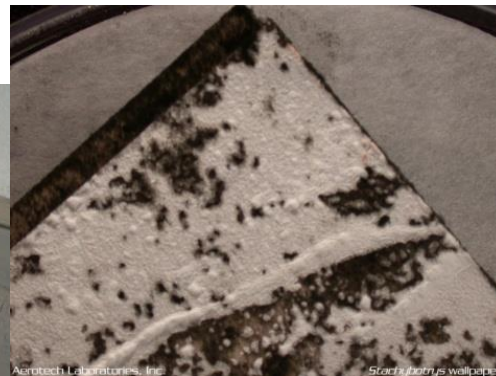
**Speed up  
Evaporation  
With Air Movers  
and  
Dehumidifiers**

# Mold Remediation



# Goals to Attain in Mold Remediation

- The goal of a mold remediation project is to restore the affected building to a pre-mold contamination condition and re-establish a healthful environment for its occupants (condition 1.)
- During the remediation, it is important to prevent the dissemination of mold contamination to the unaffected area and to protect the interior environment and the health and safety of the workers and occupants.



# Containment

Minimize potential  
for mold spore  
dissemination



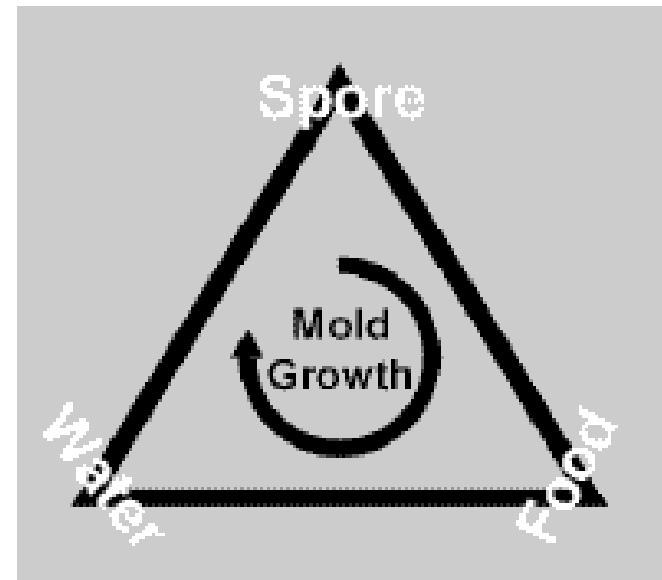
# Personal Protective Equipment

- Respirator
  - Minimum: N-95
  - Moderate: particulate
  - Maximum: PAPR
- Skin and Eyes
  - Goggles and Gloves
  - Refer to materials and chemicals
  - Tyvek suits



# Basic Mold Remediation

- Non Porous (clean)
  - Steel, Vinyl, Laminate, Tile, etc
  - Mold has not penetrated the pores
- Porous (disposal)
  - Drywall, Insulation, Wood, etc
  - Mold has penetrated the pores





# Extensive Mold Remediation

*Should have Advanced Training and Supervision:*



# Bag It!

- Bag or wrap the damaged building materials
- Do NOT squeeze the air out!
- Can be disposed of with regular waste



# What about the spores?

**Air Scrubbing** – HEPA filtering of the air to capture the remaining excessive spores.

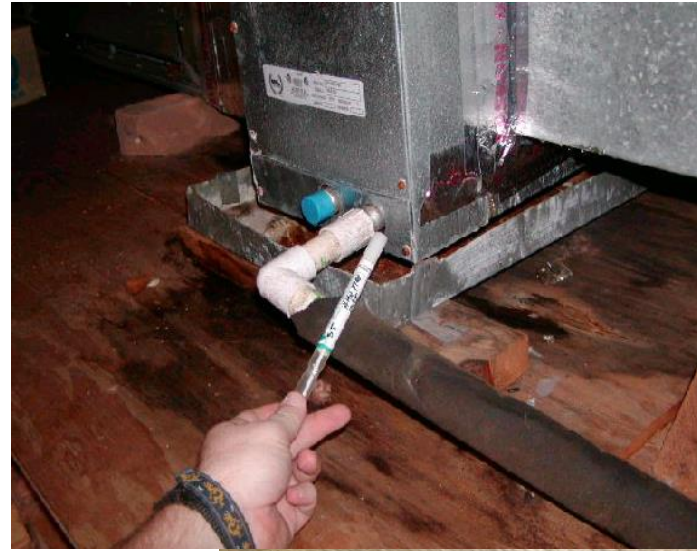
*Mold spores range from 2 – 20 microns in size*



# Mold in HVAC Units

Determine if the HVAC unit was on at the time mold was present.

- Could mold spores have been pulled into the HVAC system and distributed throughout the building?
- Inspect the entire HVAC system – registers/diffusers, ducting as much as possible, condensers/coils, filters, intakes etc.



# Tips for Preventing Mold

1. Watch for condensation and wet spots around baseboards, windows and ceilings. Repair and mitigate water intrusion ASAP!
2. Ensure moisture-generating appliances (dryers) vent to the outside.
3. Regular and thorough inspections/maintenance of common and private areas including HVAC systems and drip pans.
4. Inspect irrigation systems and ensure they are not watering the building.
5. Make sure foundations are dry. Direct drainage and slope the ground away from the properties foundation.
6. Develop strong vendor partnership. Team up to train staff

# How Can Other Staff Help?

- Improve lines of communication to rise above simple problem reporting:
  - They can be your additional eyes and ears with training
  - Exchange information not just report problems



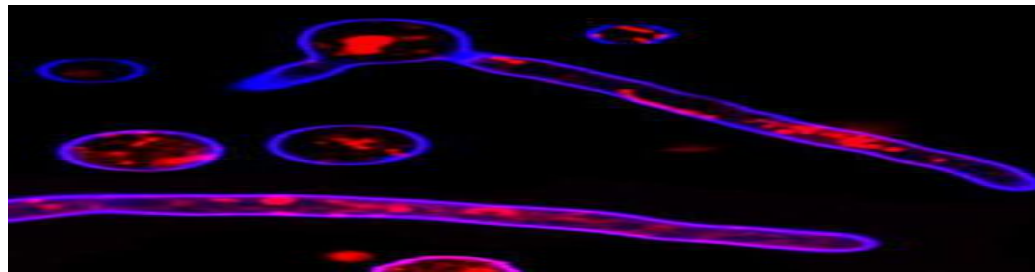
# Reach out: Calling for help

- When you have questions about cleaning-up mold.
- When daily maintenance does not keep mold from growing.
- When a water leak can not be identified or handled.
- When you are going to surpass your/teams capabilities.



# Mold Summary

- People are affected differently by mold.
- Mold untreated, becomes a building maintenance and health problem.
- When assessing mold, think of the most susceptible person in mind.
- Know that the public and your personal safety are a priority.
- Aggressively prevent and attack ALL moisture intrusion issues!
- Proper containment is **CRITICAL** to remediation success!
- Balancing best procedures with financial prudence is subjective!





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