1. PURPOSE

The purpose of Wake Forest University's (WFU) Mold Management Plan is to inform Faculty, Staff, and Students of their respective roles and responsibilities in the recognition, prevention, remediation, and documentation of mold and moisture incidents.

2. REFERENCES


http://www.epa.gov/mold/mold_remediation.html
Last update: April 18, 2013

3. DEFINITIONS

Mold is a common term used to refer to microscopic fungi or patches of fungal growth. Molds typically are fungi with a filamentous growth form often giving rise to “fuzzy,” cottony, or powdery textured colonies. Molds produce spores, which in many species are specialized to become airborne. It is the airborne particles released by fungi that can cause adverse health affects in certain individuals. Molds are commonly found in both indoor and outdoor air. Mold is naturally occurring and therefore cannot be eliminated from any environment.

Mold exposure does not always present a health problem indoors; however, individuals who are sensitive to molds can experience allergic reactions and upper respiratory irritation. Certain molds produce mycotoxins, which have been suggested to contribute to respiratory problems such as rhinitis and persistent cough. Generally, it is not necessary to identify the species of mold growing in an area, and CDC does not recommend routine sampling for molds. Since the susceptibility of individuals can vary greatly, either because of the amount or type of mold, sampling and culturing are not reliable in determining your health risk.
Moisture is necessary for mold to grow and produce spores. Wake Forest University strives to minimize water intrusion problems such as leaks, condensation, flooding, and excessive humidity. WFU will respond to any areas where it has knowledge that moisture intrusion is evident or visible. In addition, WFU’s renovation plans and scheduled deferred maintenance reduction plans include improvements to HVAC systems and interior moisture/humidity levels to further reduce the likelihood of excessive mold growth.

4. RESPONSIBILITIES

Faculty and Staff

Faculty and Staff

Faculty and Staff are integral members of the University’s Mold Management Plan. The following information is to provide Faculty and Staff quick informative tips on mold prevention and what to do if mold or water intrusion is visible in their work spaces.

Mold prevention and early detection is paramount for Faculty and Staff to assist the University with this management plan. Below are key items to practice for mold prevention in Faculty and Staff working spaces on campus, and to also, be informed of when concerns of mold should be reported to Facilities and Campus Services.

1. Do not block wall heating and cooling units with items that impede the air flow.
2. Do not place items such as plants, fish tanks, or items that hold moisture on top of the wall heating and cooling units.
3. Do not leave wet shoes or umbrellas on carpet where mold can grow.
4. Clean up spills of any kind of food or drink.
5. Remove trash and especially food containers from working area due to the chances of mold growth.
6. Report all water intrusions within your space or as noticed within the building to Facilities and Campus Services.

Water damaged building material or visible mold should not be disturbed by any staff, faculty, or student. The following information should be provided:

1. Location and description of the water damage or mold.
2. Is the area still wet or is there visible water?
3. Is there any odor?
Staff with Responsibilities with Mold Assessments and Remediation:

Facilities and Campus Services Management Staff

1. Ensure staff has proper training, cleaning agents, and PPE to perform their duties as defined in this plan.
2. Report all mold and moisture concerns noticed by employees and students to Customer Service to create a work order.
3. Ensure that all staff know how to report the assessment information and critical steps taken to remove the mold.
4. Inspect any areas where mold and mildew or moisture intrusion has been problematic during normal building inspections. Take corrective action and document with Facilities Management Customer Service.

Custodial Staff

1. During routine cleaning responsibilities, mold growth in areas less than 10 sq. ft. should be removed and that area cleaned to prevent growth from spreading.
2. Treat and remove the mold and mildew encountered during the normal cleaning of bathrooms, kitchens, and common areas. Refer to Table 1: “Guidelines for Remediating Building Materials with Mold Growth Caused By Clean Water.” The proper personal protective equipment (PPE) should be worn at all times, if applicable, as defined on the SDS of the cleaning agent. Report steps taken to treat mold/mildew to Facilities Management Customer Service in order to include all pertinent information on the work order.
3. Clean, dry, and treat any liquid or water that may be a future mold source.
4. Report all visible mold and mildew in quantities greater than 10 square feet to Customer Service and your supervisor.
5. Report to Customer Service or your supervisor any situation which could create conditions for mold growth such as leaking faucets, drainage problems, leaking roofs, etc.

Maintenance Staff

1. Correct and report to Customer Service and your supervisor any situation which could create conditions for mold growth such as leaking faucets, drainage problems, leaking roofs, etc. All information relating to the conditions found and steps taken to remediate and remove the mold and fix the water source must be provided in the work order comments.
2. During routine maintenance, staff should inspect HVAC systems for mold and/or moisture problems that could contribute to mold growth.
3. Treat and remove mold and mildew encountered during normal maintenance and inspection of mechanical spaces, bathrooms, kitchens, and common areas. Refer to Table 1: “Guidelines for Remediating Building Materials with Mold Growth Caused By Clean Water.” The proper personal protective equipment (PPE)
should be worn at all times, if applicable, as defined on the MSDS of the cleaning agent.
4. Clean, dry, and treat any liquid or water that may be a future mold source.
5. Report all visible mold and mildew in quantities greater than 10 square feet to Customer Service and your supervisor.

Customer Service (or Supervisors) generating the work orders

1. Create work orders as requested.
2. Check the “Mold” box when generating the work order.
3. Include all details when closing the work order as provided by requestor and remediator to ensure corrective action was taken. All information relating to the conditions found and steps taken to remediate and remove the mold and fix the water source must be provided in the work order comments.

Environmental Health and Safety

1. Review and revise plan as necessary.
2. Schedule and / or conduct the training as needed and maintain training records and.
3. Review and audit work orders for completeness and adherence to this plan.
4. Perform site assessments as needed during different stages of the reported incident.
5. Provide assistance in PPE selection and use as required by the SDS of cleaning agent or other technical information provided by EPA.
6. Coordinate efforts with departments on communications for mold related issues at WFU.
7. Generate reports as necessary and maintain records as applicable.

Mold Assessor

A mold assessor is defined as a WFU Facilities & Campus Services personnel trained to test and evaluate existing mold. Based on the evaluation, the assessor will determine the mold remediator personnel and equipment needed to deal with the mold situation

1. Respond to requests by students / employees for assistance.
2. Develop and document remediation plan for complex removals < 10 sq.ft or all remediation > 10 sq.ft on the work order.
3. Initiate and manage all contracted mold removal efforts.
4. Ensure that contractor’s project report is attached to the work order upon completion.
5. Attend training as scheduled by Environmental Health and Safety.
6. Arrange for or conduct testing if conditions warrant.
(Visual inspection for mold and moisture intrusion is the most effective tool for the prevention and remediation of these problems. A musty odor may also be an indicator of mold growth. If there is an odor and no obvious signs of visible growth, a moisture meter may be useful in determining areas of growth within wall cavities, beneath vinyl wallpaper, etc. Inspections for mold and/or moisture will be conducted during routine maintenance procedures.)

Mold Remediators

A mold remediator is defined as an employee of WFU Facilities & Campus Services that is trained and supplied with equipment to physically remove mold. The remediators may be augmented with contractor support for any complex or significant mold situation.

1. Respond to assigned work orders.
2. Conduct assessment based on findings.
   a. If less than ten (10) square feet
      • Seek assistance and advice from Mold Assessors if removal is deemed to be too complicated. Refer to Table 1: “Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water.”
      • Isolate area and remove as defined in Table 1 for “Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water.”
      • Wear the appropriate PPE at all times when performing removal operations.
      • Analyze, repair, and report intruding source of moisture to Facilities Management Customer Service.
   b. If greater than ten (10) square feet or removal is deemed complicated per first bullet above, report issue to Mold Assessor.
3. Attend training as scheduled by Environmental Health and Safety.

5. RESIDENT STUDENT INFORMATION

   Residence Life and Housing continues to distribute information about potential mold growth in residence halls at the University to students at the beginning of each semester. Included in the information, are steps for what to do if mold is found or suspected. Below is the information shared and key steps in prevention, early detection of mold growth in living spaces on campus, and instructions of what to do in the event that mold is found or how to request for an mold assessment.

   • Molds are part of the natural environment. Molds may begin growing indoors when mold spores land on wet or damp surfaces.
• Molds produce allergens, but like any other allergen, exposed individuals will respond differently. Some may have no reaction, while others may experience hay-fever type symptoms or more severe symptoms. If you are having symptoms you believe may be the result of mold allergens, make an appointment with Student Health for an examination.

• It is impossible to get rid of all mold spores indoors (from EPA – A Brief Guide to Mold, Moisture and Your Home [http://www.epa.gov/mold/moldbasics.html]

• Generally, it is not necessary to identify the species of mold growing in an area, and CDC does not recommend routine sampling for molds.

• WFU has a Mold Management Plan for identifying and treating areas of potential mold growth ([http://facilities.wfu.edu/downloads/ehs-mold-plan.pdf](http://facilities.wfu.edu/downloads/ehs-mold-plan.pdf)).

• WFU Facilities and Campus Services will treat any area of mold less than 10 square feet. If greater than 10 square feet, WFU will hire an outside contractor to remediate the area. This is based on recommendations from the CDC and EPA.

• Moisture sources may include leaking pipes, standing water, damp clothing or towels, or condensation in the air.

• **To help prevent mold growth in living spaces:**
  • Do not open windows while heating or cooling units are operating. This will cause condensation and may contribute to mold growth.
  • Do not leave wet or damp clothes, towels or shoes in closets. Set them out on a drying rack until completely dry.
  • Do not place potted plants or any other source of moisture on or around heating and cooling units.
  • Do not place bed or other items directly in front of the wall heating and cooling / fancoil unit due to impeding air flow in the room.
  • If you see mold, immediately call Residence Life and Housing or Facilities and Campus Services to have the area treated.

6. **PROCEDURES**

Please see the following tables for the specific guidelines. Facilities and Campus Services personnel will be responsible only for those remediations described as “Small – Total Surface Area Affected Less than 10 Square Feet.” Remediation for areas greater than 10 square feet will be conducted by qualified external contractors. Refer to Table 1 for “Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water.”
## Table 1: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*

<table>
<thead>
<tr>
<th>Material or Furnishing Affected</th>
<th>Cleanup Methods†</th>
<th>Personal Protective Equipment</th>
<th>Containment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Surface Area Affected Less Than 10 square feet (ft²)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books and papers</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpet and backing</td>
<td>1, 3, 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete or cinder block</td>
<td>1, 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard surface, porous flooring (linoleum, ceramic tile, vinyl)</td>
<td>1, 2, 3</td>
<td>For “Minor” Removal: PPE as required by cleaning agent. AND</td>
<td></td>
</tr>
<tr>
<td>Non-porous, hard surfaces (plastics, metals)</td>
<td>1, 2, 3</td>
<td>Gloves and Goggles and N-95 Respirator as appropriate</td>
<td></td>
</tr>
<tr>
<td>Upholstered furniture &amp; drapes</td>
<td>1, 3, 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wallboard (drywall and gypsum board)</td>
<td>3, possible 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling tile</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood surfaces</td>
<td>1, 2, 3 and possibly 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Total Surface Area Affected Greater than 10 square feet (ft²)** | Remediation conducted by qualified contractor |

### Cleanup Methods

**Method 1:** Damp-wipe surfaces with plain water or with water and WFU approved cleaning chemical products (except wood—use wood floor cleaner); scrub as needed.

**Method 2:** Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried). Steam cleaning may be an alternative for carpets and some upholstered furniture.

**Method 3:** High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.

**Method 4:** Discard—remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area after it is dried.

### Personal Protective Equipment (PPE)

**Minimum:** Gloves, N-95 respirator, goggles/eye protection are recommended

**Limited:** Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection

**Full:** Gloves, disposable full body clothing, head gear, foot coverings, full-face respirator with HEPA filter

### Containment

None required at this time for removal of total surface area less than 10 square feet.

*Information provided in table are abstracts from literature and remediation documents including Bioaerosols: Assessment and Control (American Conference of Governmental Industrial Hygienists, 1999) and IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration, (Institute of Inspection, Cleaning and Restoration, 1999).*

**Personal Protective Equipment (PPE)**

Wake Forest University will provide necessary personal protective equipment (PPE) and supplies to perform mold cleanup as outlined in Table 1. Use professional judgment to determine prudent levels of PPE and containment for each situation, particularly, as the remediation site size increases and the potential for exposure and health effects rises. Assess the need for increased PPE if, during the remediation, more extensive contamination is encountered than was expected. These guidelines are for damage caused by clean water. If you know or suspect that the water source is contaminated with sewage or chemical or biological pollutants, then the Occupational Safety and Health Administration (OSHA) require the appropriate PPE and containment.

Select the method most appropriate to situation. Since molds gradually destroy the things they grow on, if mold growth is not addressed promptly, some items may be damaged such that cleaning will not restore their original appearance. If mold growth is heavy and items are valuable, the owner of the contaminated product may wish to consult a restoration/water damage/remediation expert.

7. **Education / Training**

Students will be provided information by Residence Life and Housing on how to report all building concerns to Facilities and Campus Services Customer Service. WFU employees will be trained according to his/her job duties. Awareness training will be conducted during the new hire orientation. Advanced training for those responsible for assessments and remediation will be conducted prior to assuming responsibility. Refresher training will be conducted whenever inadequacies in this plan are observed and noted.

<table>
<thead>
<tr>
<th>WFU Staff &amp; Students</th>
<th>Recognize Mold</th>
<th>Health Effects</th>
<th>Cause of Indoor Mold</th>
<th>Table 1</th>
<th>Remediation Methods</th>
<th>Assessment of Mold</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;CS CUSTODIAL</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>F&amp;CS CUSTOMER SERVICE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>F&amp;CS MAINT STAFF</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>F&amp;CS SUPV/MGRS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>F&amp;CS MOLD REMEDIATORS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>F&amp;CS MOLD ASSESSORS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>EHS STAFF</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
### 8. REVISIONS

<table>
<thead>
<tr>
<th>REVISION</th>
<th>REVISION DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review and revisions conducted on Oct 30. Revisions include: Additions</td>
<td>January 22, 2015</td>
</tr>
<tr>
<td>to Responsibilities, Training,</td>
<td></td>
</tr>
<tr>
<td>Review of Mold Management Plan was conducted by third party Industrial</td>
<td>October 2012</td>
</tr>
<tr>
<td>Hygienist for effectiveness, efficiency, during</td>
<td></td>
</tr>
<tr>
<td>Changed signing authority to Jim Alty</td>
<td>10/4/2010</td>
</tr>
<tr>
<td>Changed “Facilities Management” to “Facilities and Campus Services”</td>
<td>10/4/02010</td>
</tr>
</tbody>
</table>