I. **Program Goals and Objectives**

Northwestern University is committed to maintaining a safe and healthy work environment. It is the goal of Northwestern University to eliminate potential hazards in the workplace and to operate buildings in a manner that meets established performance standards regarding ventilation, temperature, relative humidity, air quality, odor, noise, and lighting. This program establishes standard procedures for the management of indoor air quality (IAQ) concerns.

II. **Scope and Application**

This program applies to all Northwestern University personnel and all owned and leased indoor environments.

III. **Definitions**

**Indoor Air Quality (IAQ):** Describes how indoor air can affect a person’s health, comfort, and ability to work. IAQ can include temperature, humidity, lack of outside air (poor ventilation), airborne particulates, mold from water damage, or exposure to other chemicals.

**Acceptable Indoor Air Quality:** Some IAQ contaminants such as dust, chemicals, and mold are inherently present and cannot be completely removed from the work environment. As such, indoor air quality is considered acceptable when air contaminants are below established regulatory limits or best practice guidelines.

IV. **Responsibilities**

A. **Risk Management**

i. Administrative oversight of the Indoor Air Quality Program, including developing the written Indoor Air Quality Program and revising as necessary;

ii. Conduct indoor air quality investigations in response to reported personnel health concerns and/or symptoms related to work environment;

iii. Conduct monitoring for indoor air quality components and mold as necessary, and maintain monitoring equipment;

iv. Maintain records of exposure measurements;

v. Provide exposure monitoring results to all employees monitored for exposure;

vi. Collaborate with Facilities Management and/or outside contractors as needed to remediate IAQ concerns.

B. **Supervisors/Departments**

i. Contact Risk Management regarding health concerns or symptoms related to the work environment;

ii. Provide funding for laboratory analysis or other outside services necessary to complete IAQ investigations;

iii. Implement remedial recommendations;

iv. Provide accommodations as necessary;

v. Provide appropriate PPE for employees as needed.
C. **Employees**
   i. Follow the procedures and requirements outlined in this program;
   ii. Report indoor air quality concerns to your supervisor, Facilities Management, and/or to Risk Management, as necessary;
   iii. Cooperate with IAQ investigations and remediation, as necessary.

D. **Facilities Management (FM)**
   i. Respond to indoor air quality concerns, taking necessary remedial actions;
   ii. Report health-related indoor air quality concerns to Risk Management;
   iii. Ensure acceptable indoor air quality levels are maintained.

V. **Reporting Procedures**

Indoor air quality concerns should be reported according to the following procedures:

A. **Immediate Issues**
   Any IAQ concern that poses an immediate threat to personal health or safety should be reported to Northwestern Police Dispatch (See Section IX: Contact Information). In an emergency, dial 911.

B. **Physical Comfort**
   Contact Facilities Management Customer Service (FMCS; See Section IX for contact info) for concerns related to physical discomfort. Such concerns include the following:
   i. Temperature or humidity issues;
   ii. Air movement/drafts from diffusers;
   iii. Stale air;
   iv. Particulates or dirt coming from the air handling system diffusers;
   v. Mold odor or visible mold;
   vi. Other unusual or unidentified odors.

C. **Health Concerns and Symptoms**
   Personnel with health related symptoms believed to be related to the work environment should complete the IAQ Survey (Appendix I) and return it to Risk Management (See Section IX for contact info). Health related concerns can include any of the following: headaches, nausea, dizziness, upper respiratory irritation, chest-tightness, dry/sore throat, fatigue, itching/irritated eyes, runny-nose, congestion, or shortness of breath. Upon receipt of the IAQ survey, Risk Management will contact the Northwestern personnel who submitted the complaint to schedule an investigation of the work area (See Section VI: Investigation Procedures).

D. **Mold**
   Any concern about mold or potential mold should be reported to Facilities Management Customer Service. FMCS will follow procedures as outlined in the Northwestern University [Water Intrusion Guide](#). Risk Management and outside contractors will be involved as necessary per the Water Intrusion Guide.
VI. Investigation Procedures

Risk Management will perform IAQ investigations according to the following:

i. Review the IAQ survey, if available;

ii. Interview personnel with concerns and other building occupants in the immediate area of concern;

iii. Conduct a walk-through inspection of the building area of concern;

iv. Conduct air monitoring for indoor air quality parameters as necessary. IAQ parameters may include the following: temperature, relative humidity, carbon dioxide, volatile organic compounds (VOCs), and particulates;

v. Contact outside contractor to perform additional environmental testing, if necessary;

vi. Compare measurements to established indoor air quality standards or guidelines (see Section X: References, Appendix II: IAQ Guidelines);

vii. Report results to appropriate personnel and provide recommendations if necessary.

VII. Medical Evaluations

Northwestern University employees experiencing health concerns and symptoms related to indoor air quality in their work environment should report concerns to their supervisor and contact Risk Management (Section IX: Contact Information). Risk Management can help obtain medical evaluations at our occupational health partners:

Chicago: Northwestern Medicine Corporate Health, 312.926.8282
676 N St Clair St, Suite 900, Chicago, IL 60611

Evanston: Northshore OMEGA, 847.657.1700
2650 Ridge Ave, Suite 4225, Evanston, IL 60201

VIII. Recordkeeping

Risk Management will retain all indoor air quality and exposure monitoring reports. These reports will be retained for 30 years and made available to personnel upon request.

IX. Contact Information

For questions and for health related concerns/symptoms contact Risk Management, Gwen Butler at gwen.butler@northwestern.edu or 847.491.4936.

Facilities Management Customer Service, Monday – Friday 7:00 am – 7:00 pm
Evaston: 847.491.5201
Chicago: 312.503.8000

Northwestern University Police
847.491.3254 or universitypolice@northwestern.edu

X. References

American Industrial Hygiene Association (AIHA) Improving Indoor Air Quality at Work
United States Environmental Protection Agency (EPA) An Office Building Occupants Guide to Indoor Air Quality
Occupational Safety and Health Administration (OSHA) Indoor Air Quality
Appendix 1  Indoor Air Quality Survey

Name: _______________________________________________________ Date: ______________________________

Location of Concern:  ☐ Office  ☐ Residence  Gender:  ☐ Male  ☐ Female

Department: __________________________________________________ Job Title: ___________________________

Campus Building and Room/Dorm #: __________________________________________________________________

Email: ________________________________________________________ Phone number: _______________

1. How long have you been working/living in this building? ______________________________

2. How long have you been working/living in your current office/room/residence? ______________

3. Are you concerned about any of the following in the building? (check all that apply)
   ☐ Temperature too hot  ☐ Smoky air  ☐ Peculiar odors
   ☐ Temperature too cold  ☐ Stale air  ☐ Chemicals fumes/mists
   ☐ Stuffy air  ☐ Soot by air vents  ☐ Drafts

4. Is there a particular time of day you notice the air quality issue? (check all that apply)
   ☐ Mornings  ☐ Afternoons  ☐ Nights
   ☐ All day long  ☐ No noticeable pattern

5. Common indoor air quality issues are listed below. Please check any that apply to your situation:
   ☐ Lack of ventilation  ☐ Odor(s) If so, please describe: ______________________________
   ☐ Dust in the air  ☐ Visible mold
   ☐ Other, specify: ______________________________________________________________

6. Has there been a flood or any water damage recently?  ☐ Yes  ☐ No
   If yes, please describe: __________________________________________________________________

7. Number of persons (estimate) working/living in the same room: ________

8. Number of windows in the same room: ________  Do the windows open?  ☐ Yes  ☐ No
9. Do you have any of the following health conditions? (This is a list of symptoms that result in buildings with air quality problems. Not all of these may be present in your building. Check all that apply.)

- [ ] Skin rash
- [ ] Chills or fever
- [ ] Headache
- [ ] Dizziness
- [ ] Hearing disturbances
- [ ] Dry cough
- [ ] Heartburn
- [ ] Dry skin
- [ ] Shortness of breath
- [ ] Nausea
- [ ] Skin irritation/itching
- [ ] Sneezing or coughing
- [ ] Chest tightness
- [ ] Eye or nose irritation
- [ ] Sinus congestion or runny nose
- [ ] Fatigue/drowsiness
- [ ] Sore or dry throat
- [ ] Nasal irritation or nosebleeds

Other: ________________________________________________________________

10. When do these symptoms occur? (check all that apply)

- [ ] Mornings
- [ ] Afternoons
- [ ] Nights
- [ ] All day long
- [ ] No noticeable pattern

11. Are these symptoms worse on some days than others? (e.g., Tuesdays are bad; Thursdays are not)

Specify which days of the week: _____________________________________________

12. Where in the building/residence hall do these symptoms occur? (check all that apply)

- [ ] At my desk
- [ ] In the lavatory
- [ ] In my residence
- [ ] In the lounge
- [ ] No particular place
- [ ] Other ______________________________________________________________

13. When did you first notice these symptoms? ____________________________________________

14. Do you suffer from allergies?  

- [ ] Yes
- [ ] No

If yes, please specify: __________________________________________________________

If yes, what time of year are you most affected? _________________________________

15. When do you experience these symptoms?

- [ ] Only at work
- [ ] Only at my residence
- [ ] At work and at home
16. Have you had to leave work early or miss work because of these symptoms?   ☐ Yes  ☐ No

If yes, how many times in the past month? _________

If yes, how long were you out of work? (# of days) _______

17. Are the symptoms better when you are away from the area?   ☐ Yes  ☐ No

18. Have you seen a physician about these symptoms?   ☐ Yes  ☐ No

If yes, what did the doctor say and when? ______________________________________________

19. Has a doctor diagnosed you with any of the following health problems? (check all that apply)

☐ Hay fever, pollen allergies  ☐ Asthma

☐ Chronic bronchitis  ☐ Chronic sinus problems

☐ Skin allergies, dermatitis  ☐ Other

20. Have any of these worsened lately?   ☐ Yes  ☐ No

If yes, which ones? ______________________________________________

21. Do you smoke?   ☐ Yes  ☐ No

22. Do you seem to be getting more colds or flu than normal?   ☐ Yes  ☐ No

23. Has anything happened recently at your workplace or residence that could affect the air quality? (e.g., new carpeting, new furniture, new equipment, etc.) ____________________________________________

24. What do you think is the cause of your symptoms or illness?

☐ Other people smoking  ☐ Cleaning and maintenance

☐ Temperature/ventilation  ☐ Renovations/construction

☐ Presence of toxic chemicals or gas  ☐ None of the above

25. Have you or someone brought furniture from elsewhere into your office or residence?   ☐ Yes  ☐ No

26. Have any alarms, such as smoke or carbon monoxide, activated recently?   ☐ Yes  ☐ No

Other comments about the indoor air quality situation: ____________________________________________

________________________________________________________________________________________

____________________________________________________________________________________________
## Appendix 2  Indoor Air Quality Standards and Guidelines

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>IDPH*</th>
<th>ASHRAE**</th>
<th>OSHA PEL***</th>
<th>ACGIH TLV****</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>20% - 60%</td>
<td>30% - 60%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Temperature</td>
<td>68° - 75° (winter)</td>
<td>68° - 75° (winter)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>73° - 79° (summer)</td>
<td>73° - 79° (summer)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>1,000 ppm</td>
<td>1,000 ppm</td>
<td>5,000 ppm</td>
<td>5,000 ppm</td>
</tr>
<tr>
<td></td>
<td>(&lt;800 ppm preferred)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>9 ppm</td>
<td>9 ppm</td>
<td>50 ppm</td>
<td>25 ppm</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>0.01 ppm</td>
<td>N/A</td>
<td>20 ppm</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Ozone</td>
<td>0.08 ppm</td>
<td>N/A</td>
<td>0.1 ppm</td>
<td>0.05 ppm</td>
</tr>
<tr>
<td>Particulates</td>
<td>0.15 mg/m$^3$ (PM 10) (150 μg/m$^3$) 24-hr 0.065 mg/m$^3$ (PM 2.5) (65 μg/m$^3$) 24-hr</td>
<td>N/A</td>
<td>15 mg/m$^3$(total)</td>
<td>10 mg/m$^3$(total)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m$^3$(resp.)</td>
<td>3 mg/m$^3$(resp.)</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>0.1 ppm (office)</td>
<td>N/A</td>
<td>0.75 ppm</td>
<td>0.3 ppm</td>
</tr>
<tr>
<td></td>
<td>0.03 ppm (home)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>0.05 ppm</td>
<td>N/A</td>
<td>5 ppm</td>
<td>3 ppm</td>
</tr>
<tr>
<td>Radon</td>
<td>4.0 pCi/L</td>
<td>N/A</td>
<td>100 pCi/L</td>
<td>4 WLM/yr (working level months/year)</td>
</tr>
</tbody>
</table>

* Illinois Department of Public Health recommendations

** American Society of Heating, Refrigerating and Air-Conditioning Engineers recommendations

*** Occupational Safety and Health Administration Permissible Exposure Limit — this level is a time-weighted average and is an enforceable standard that must not be exceeded during any eight-hour work shift of a 40-hour work week.

**** American Conference of Governmental Industrial Hygienists Threshold Limit Value — this level is a recommended time-weighted average upper limit exposure concentration for a normal eight to 10-hour workday and a 40-hour work week.

N/A: Not Applicable or Not Established