



**Environmental
Health and
Safety Office**

Indoor Air Quality Program

The purpose of this program is to inform the University community about indoor air quality (IAQ).

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<http://www.stlawu.edu/environmental-health-and-safety/environmental-health-and-safety-policies>

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Based on policy of the University of Rochester <http://www.safety.rochester.edu/ih/iaqpolicy.html>

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Indoor Air Quality Policy

1. **Purpose:** The purpose of this program is to inform the University community about indoor air quality (IAQ).
2. **Scope:** University wide. The University recognizes the impact that indoor air quality has in the workplace. In an effort to provide the University Community with the optimum level of indoor air quality, Environmental Health and Safety has developed an indoor air quality program.

Symptoms arising from poor indoor air quality often mimic those symptoms commonly associated with a cold, flu or allergies. These symptoms may include upper respiratory irritation, congestion, headaches, nausea, fatigue and itchy or watery eyes. Through our indoor air quality program of occupant interviews, building inspection and air quality testing, Environmental Health and Safety is often able to determine the cause of indoor air quality problems.

The objectives of this program includes the following:

- To prevent illness and adverse health symptoms associated with poor indoor air quality
- To respond to indoor quality complaints effectively and to make recommendations for improvement;
- To maintain indoor air quality within acceptable levels according to consensus guidelines.

3. **References:**

- (a) ASHRAE, American Society of Heating and Air Conditioning Engineers, as presented in standard 62-2004.
- (b) General Duty Clause of the OSH Act of 1970, section No. 5

4. **Definitions:**

Building Material Contamination: Building components treated with a variety of chemicals and preservatives are common sources of indoor air quality problems. Glues and adhesives from new carpeting, and formaldehyde from new particleboard and upholstery may off gas and become sources of contamination.

Carbon Dioxide: Carbon dioxide (CO₂), a major product of human respiration, is used as an indicator to evaluate the performance of ventilation systems. Ordinary outside air in urban areas normally contain about 350 to 500 parts per million (ppm). ASHRAE standard 62-2004 (Ventilation for Acceptable Indoor Air Quality) recommends that CO₂ levels be maintained below 1,000 ppm.

Contamination From Inside the Building: Contaminants commonly found inside the building include:

- Ozone from copiers

- Cleaning agents
- New furniture and carpets
- Sewer gas from dry traps
- Appliances not properly maintained
- Pesticides
- Cosmetics
- Humidification devices

Contamination From Outside the Building: Contamination commonly found outside of buildings include:

- Exhaust from motor vehicles
- Fumes from construction or renovation activities

Inadequate Ventilation: Inadequate ventilation occurs when an insufficient amount of fresh outside air is supplied to the interior environment.

Microbial Contamination: Microbial Contamination occurs in buildings that are susceptible to water leaks and other sources of moisture. Contaminants can also be introduced into buildings from stagnant water in HVAC air distribution systems and cooling towers. In general, prevention of microbiological contamination is accomplished by eliminating standing water and other sources of moisture.

Relative Humidity: Relative humidity levels can affect the release rate of many indoor contaminants, their concentrations in the air, and the potential growth of microbial organisms. Humidity can also have a direct effect on worker comfort. In ASHRAE 55-1981, a "comfort chart" shows an acceptable range of humidity to be from 20 to 60%.

Temperature: Temperature ranges of 73 degrees F to 79 degrees F during the winter months, and 69 to 75 during the summer months are recommended by ASHRAE. These guidelines are intended to achieve thermal conditions in a given environment that at least 80% of persons who occupy that environment will find it acceptable or "comfortable".

5. **Responsibilities:** Environmental Health and Safety investigates indoor air quality complaints and distributes written final reports to affected parties.

6. **Procedures:**

Initial reports of an indoor air quality concern should be documented on the Indoor Air Quality Complaint Form, Appendix I. This form may be completed by any St. Lawrence University employee, or by EHS staff following verbal notification.

IAQ Investigation

- **Phase I Assessment**

The first step in a typical IAQ investigation is a Phase I or preliminary assessment. Phase I assessments include interviewing occupants using an **employee questionnaire and occupant diary (see appendices II and III)** and performing a walk-through inspection of the building or area of complaint. The questionnaire is used to obtain information about the nature of the employee complaints and symptoms and also to determine the magnitude of the problem.

During the walk-through, building ventilation systems are evaluated and potential sources of contamination are identified. If the immediate cause or source cannot be found, a Phase II assessment is required.

- **Phase II Assessment**

During a Phase II assessment, common indoor air quality parameters including temperature, relative humidity, and carbon dioxide levels are measured.

The most commonly cited quantitative measurements of indoor air quality are provided by **ASHRAE, American Society of Heating and Air Conditioning Engineers**, as presented in standard 62.1-2004.

- **Phase III Assessment**

A Phase III Assessment is performed when a definitive cause for the symptoms cannot be determined during the Phase II Assessment of the investigation.

Phase III Assessments consists of extensive and more specific monitoring and sampling for chemical and/or microbial contaminants. Environmental Health and Safety often contracts Phase III Assessments to Professional Indoor Air Consultants. In our final report for a Phase III investigation, our office will typically recommend that the occupant seek the services of an occupational health physician.

7. **Website Address for this Policy:** <http://www.stlawu.edu/environmental-health-and-safety/resource/indoor-air-quality-0>

8. **Appendices:**

- I. Indoor Air Quality Complaint Form
- II. Occupant Interview
- III. Occupant Diary

9. **Document Revision History:**

Revision Number:	Date:	Description of Revision:
1	2/17/2015	Updated name of contact person to Theresa Simoni
2	4/4/2016	Update contact person to Nick Ormasen

Appendix I

Indoor Air Quality Complaint Form

OFFICE USE ONLY

File Number:

Received By:

Date Received:

This form can be filled out by the building occupant or by a member of the building staff.

Occupant Name: _____ Date: _____

Department/Location in Building: _____ Phone: _____

Completed by: _____ Phone: _____

This form should be used if your complaint may be related to indoor air quality. Indoor air quality problems include concerns with temperature control, ventilation, and air pollutants. Your observations can help to resolve the problem as quickly as possible. Please use the space below to describe the nature of the complaint and any potential causes.

We may need to contact you to discuss your complaint. What is the best time to reach you? _____

So that we can respond promptly, please return this form to :

Nick Ormasen ph. # 315-229-5303

Via e-mail nick@stlawu.edu.

Via campus mail: Nick Ormasen, EHS Office, Central Warehouse

Appendix II Occupant Interview

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Building Name: _____ File Number: _____

Room # or work area _____

Occupant Name: _____ Work Location: _____

Completed by: _____ Date: _____

SYMPTOM PATTERNS

What kind of symptoms or discomfort are you experiencing?

Are you aware of other people with similar symptoms or concerns? Yes ___

No ___

If so, what are their names and locations? _____

Do you have any health conditions that make you particularly susceptible to environmental problems?

___ Wear contact lenses

___ Chronic respiratory problems

___ Allergies

___ Immune system suppressed

TIMING PATTERNS

When did your symptoms start?

Do they go away? If so, when?

Have you noticed any other events (such as weather events, temperature or humidity changes, or activities in the building) that tend to occur around the same time as your symptoms?

Occupant Interview

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SPATIAL PATTERNS

Where are you when you experience symptoms or discomfort?

Where do you spend most of your time in the building/office/lab?

ADDITIONAL INFORMATION

Do you have any observation about building conditions that might need attention or might help explain your symptoms (e.g., temperature, humidity, drafts, stagnant air, odors)?

Have you sought medical attention for your symptoms?

Do you have any other comments?

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Appendix III

OCCUPANT DIARY

Occupant Name:

Location:

Date:

On the form below, please record each occasion when you experience a symptom of ill health or discomfort that you think may be linked to an environmental condition in this location.

It is important that you record the time and date and your location within the building as accurately as possible, this will help to identify conditions (e.g., equipment operation) that may be associated with your problem. Also, please try to describe the severity of your symptoms (e.g., mild, severe) and the duration. Any other observations that you think may help in identifying the cause of the problem should be noted in the "comments" column. Feel free to attach additional pages or use more than one line for each event if you need more room to record your observations.

<i>Time/Date</i>	<i>Location</i>	<i>Symptom</i>	<i>Severity/Duration</i>	<i>Comments</i>

QUESTIONS? Contact EH&S at (315) 229-5303 or e-mail questions to nick@stlawu.edu.