

# Indoor Air Quality in Northwest Schools

***An electronic newsletter for school Indoor Air Quality (IAQ) exclusively for Northwest schools***

**Spring Quarter 2003**

*“ When mold colonization is discovered in the home, school, or office, it should be remediated after the source of the moisture that supports its growth is identified and eliminated.”*

## **U.S. Environmental Protection Agency Indoor Air Quality Tools for Schools National Symposium**

Each year, the U.S. Environmental Protection Agency Region 10 awards grants to school districts and other organizations to support the Indoor Air Quality Tools for Schools program in Alaska, Idaho, Oregon, and Washington. Grants are awarded on a competitive basis. If you would like to receive future Region 10 requests for proposals, please send your name, organization, e-mail address, and phone number to Ann Wawrukiewicz at [wawrukiewicz.ann@epa.gov](mailto:wawrukiewicz.ann@epa.gov).

The U.S. Environmental Protection Agency will host its Fourth Annual Indoor Air Quality Tools for Schools National Symposium October 26-28, in Washington, DC. Building on the success of the past three years, the symposium will bring together school board officials, administrators, school nurses, teachers, facility managers, school and health association members, parents and others to discuss indoor air quality in our nation's schools. Symposium sessions will address various topics associated with implementing an IAQ program in a school, including communication strategies, mold remediation, facilities management, school building design, student performance, financing, asthma management and more.



Registration information is available on EPA's web site at [www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools). In past years, EPA and its partners have provided registration and travel scholarships for the symposium. At this time, it's not known how much scholarship funding will be available for this year. If you would like information about symposium scholarships as it becomes available, please contact Ann Wawrukiewicz at [wawrukiewicz.ann@epa.gov](mailto:wawrukiewicz.ann@epa.gov).

## **School Indoor Air Quality Newsletter for Northwest Schools**

A quarterly electronic newsletter exclusively for NW schools.

Please circulate this subscription opportunity throughout the Northwest to those who may be interested.

There are two ways to subscribe:

1) To view the newsletter, click here:

<http://www.energy.wsu.edu/buildings/IAQ.htm>

The newsletter contains a link for subscription information.

2) Or, send a blank email message to: [subscribe-iaq@listserv.energy.wsu.edu](mailto:subscribe-iaq@listserv.energy.wsu.edu)

You will receive a confirmation message. When you reply to that message you will be subscribed and will receive all future postings. You can easily unsubscribe at any time.

This broadcast email list not only provides automatic delivery of the quarterly School IAQ Newsletter, but includes announcements about news of interest, training events, grant opportunities, and other information useful to school districts, agencies, and stakeholders involved in school IAQ and operations and maintenance.

The newsletter is an opportunity for all interested parties to communicate, and add to the collective wisdom.

## Tools for Schools (TFS) Around the Region

### Idaho



The Idaho Division of Health's Indoor Environment Program and the Washington State University (WSU) Cooperative Extension Energy Program evaluated 24 Idaho schools during the 2002-2003 school year. In the past five years, evaluators have assessed a total of 98 Idaho schools. Idaho Falls, McCall and Post Falls

have now implemented the Tools for Schools program district wide. For more information, contact Kara Stevens, manager, Idaho Indoor Environment Program at 1-800-445-8647, or [stevensk@idhw.state.id.us](mailto:stevensk@idhw.state.id.us).

### Alaska

After attending the two-day Tools for Schools indoor air quality training offered in Tacoma last fall, the Alaska chapter of the Asthma and Allergy Foundation of America (AAFA) coordinated TFS implementation at nine schools in the Anchorage



School district this school year. Working with school nurses and other district staff, the foundation invited the Washington State University (WSU) Cooperative Extension Energy Program to Anchorage to help provide baseline IAQ evaluations. The AAFA has also used some of its funding from the U.S. Environmental Protection Agency to provide carbon dioxide test equipment to the Anchorage School District to help evaluate ventilation rates in district buildings. For additional information contact:

#### **Suzi Jackson, Executive Director,**

AAFA Alaska Chapter  
PO BOX 201927  
Anchorage, AK 99520-1927  
(907) 696-4810  
[aafaAlaska@gci.net](mailto:aafaAlaska@gci.net)

### Oregon

The Salem-Keizer School District received a grant from the U.S. Environmental Protection Agency to implement an Indoor Air Quality Tools for Schools program in all district buildings. The program goals are to:



- Provide information about indoor air quality and how it affects the health and productivity of students, teachers and staff in school buildings;
- Identify the causes of poor IAQ;
- Offer simple solutions to IAQ problems; and,
- Outline a process for rectifying larger problems.

EPA has produced a Tools for Schools kit, which includes a video describing how to implement the program and the basics of ventilation, checklists for employees, and sample memos and other communication information. The program shows staff how to carry out a practical plan of action to improve indoor air problems at little or no cost using straightforward activities and in-house staff.

Our goal is to identify an IAQ coordinator for each location. These site IAQ coordinators will be trained on the Tools for Schools program and will work with the site Safety Committees to implement it in each building to improve IAQ.

The grant money is being used to train these site IAQ coordinators, all custodians and lead maintenance staff on how to use the kit. Rich Prill of the Washington State University (WSU) Cooperative Extension Energy Program will conduct the trainings.

To date, we have identified and trained 51 IAQ coordinators, representing 72 percent of elementary schools, 82 percent of middle schools, 75 percent of high schools and 86 percent of administration buildings, plus 163 custodians and maintenance staff. The remaining site IAQ coordinators will be identified and trained in August.

The next step is to have the IAQ coordinators train their site Safety Committees, and then do building walk-throughs.

Certificates are awarded to staff members who complete the IAQ training, and we are working on an incentive program to encourage staff members to implement the Tools for Schools program in their buildings.

For more information, please contact Vonnie Good, Risk Management, Salem-Keizer School District, Salem, Ore.: 503-399-3070.

## Washington



School district employees and staff from the state health department recently participated in two-day training sessions to learn how to assess indoor air quality in schools. Specialists from the Washington State University (WSU) Cooperative Extension Energy Program, the Washington State Department of Health, and Educational Service District 101 presented the October training sessions in Tacoma and Spokane. The trainers also worked on-site with staff from the King County Health District in Seattle, Kent Schools, the Kittitas Health District in Ellensburg, the Tri-County Health District in Stevens, and Pend Oreille county schools. More than 50 other schools completed baseline IAQ assessments as a step toward Tools for Schools program implementation in their buildings.

The WSU Energy Program will present a one-day class on indoor air quality in schools May 28 in Yakima, sponsored by Educational Service District 105. For more information contact:

**Orlando Cerrillo, loss control consultant**  
**[[orlandoc@esd105.wednet.edu](mailto:orlandoc@esd105.wednet.edu)],**

Educational Service District 105

33 South Second Ave.

Yakima, WA 98902

(509) 575-2885 - Ph

(509) 575-2918 – fax

A similar class will be offered June 25 in Wenatchee sponsored by Educational Service District 171. For information contact: Karen Walters or Tamar Sutherland, North Central Educational Service District (ESD 171), 509-665-2643

## Bellingham School District Indoor Air Program Among Best in Northwest

Located in Northwest Washington State, the Bellingham School District has taken full advantage of a variety of indoor air quality workshops sponsored by the U.S. Environmental Protection Agency and local organizations such as the Northwest Air Pollution Authority (NWAPA), based in Mount Vernon. Personnel involved with capital projects, maintenance and custodial operations have benefited from training in indoor air quality fundamentals, hands-on work with monitoring equipment, and information about moisture and mold. As part of the effort to improve indoor air quality in schools, architects also received training on how to build healthier, more sustainable schools, while staying within the budget.

But the Bellingham School District has a knack for taking things a step further in the right direction. Today, every school has an air filter change-out manual and record. Old unit ventilators have been reconfigured with more efficient filters that are less easily bypassed. And the lead custodian surveys every school in the district twice a year to check basic IAQ parameters such as ventilation adequacy using equipment purchased by the district. While most schools in the region are just introducing high-performance green cleaning, many buildings in the Bellingham School District have already switched to housekeeping supplies that meet or exceed the Green Seal Certification ([www.greenseal.org](http://www.greenseal.org)) label. The district has also provided at least one High Efficiency Particulate Air (HEPA) backpack vacuum per school and is rapidly phasing out older, less efficient models. The district has also created an exemplary manual of policies and procedures for the Indoor Air Quality program.

“The free training and consultation provided by NWAPA, the WSU Energy Program, and EPA have really driven our progress,” says Mike Anderson, building and grounds manager for the district. “It would not have happened without their guidance and support. And that’s not a ‘sound bite;’ that is from the heart.”

## Northwest schools seek to improve indoor environments with Green Housekeeping

Pacific Northwest schools are focusing on “green housekeeping,” an effort to clean for health in addition to appearance. To kickoff the High Performance/Green Housekeeping initiative, nationally recognized authority Steve Ashkin recently presented eight workshops across the state. His appearances were sponsored by the American Lung Association of Washington, the U.S. Environmental Protection Agency, the Northwest Air Pollution Authority (NWAPA), the Washington Education Association, and school districts across the state.

Ashkin is president of The Ashkin Group, a Bloomington, Indiana, consulting firm that specializes in green cleaning. Key elements of green housekeeping include switching to cleaning products that are safer for workers, occupants and the environment, and the use of high performance cleaning strategies, techniques and equipment for deeper cleaning within current budgets.

Cost considerations are paramount. Ashkin says, “A school that already works at keeping its buildings reasonably clean will not incur greater costs if they switch to green housekeeping – costs are neutral, but benefits are huge.”

Switching to a comprehensive green housekeeping program offers many benefits and isn’t like starting from scratch. By working smarter, not harder, schools will find they can reduce concentrations of airborne allergy and asthma triggers, reduce potential for exposure to toxic chemicals and improve appearance without breaking the budget.

The first set of four six-hour workshops were held in Spokane, Burien, Mount Vernon and Vancouver with the aim of garnering support from school administrators for the green housekeeping concept.



The second set of four workshops, at the same venues, provided more detail for custodial supervisors and staff about how to introduce comprehensive green housekeeping programs into their schools.

These sessions were very well attended. Feedback from participants in the workshops was positive and bodes well for enthusiastic support of efforts to implement green housekeeping in schools. Attendees included Mack Armstrong, president of the Washington Association of School Administrators. Armstrong, of Mount Vernon, came away from the workshop enthusiastically supporting the green housekeeping concept. He encouraged interested schools to volunteer to participate in the program.

The next phase of the Green Housekeeping initiative is a pilot project in selected schools across Washington, funded by EPA, NWAPA, and participating school districts. The project is due to kick off at the beginning of the 2003-2004 school year.

The goal of the pilot project is to implement green housekeeping programs that are self-sustaining. The pilot project will allow experimentation, refinement of techniques and strategies, and even some failure when something doesn’t make sense. In this manner, schools will discover on their own what works and what doesn’t work in Northwest schools. Leading experts will serve in a technical advisory role, but schools will have the last word about what makes sense for them. Participants will document and report on their successes and difficulties to allow other schools to share in the common wisdom evolving from these activities.

To learn more about green housekeeping and how it can help your school, contact: Dave Blake at the Northwest Air Pollution Authority (NWAPA) in Mt. Vernon, Wash. Dave’s phone number is 360-428-1617 Ext. 212, or e-mail him at [dave@nwair.org](mailto:dave@nwair.org).

## Mold Eats House; Mold Plagues Schools; Toxic Black Mold.



These are some of the headlines we've all seen since the popular media discovered mold a few years ago. Parents, teachers and others are increasingly interested and concerned about how mold affects indoor environments and building occupants.

Many resources now exist to help understand the problems associated with mold in buildings. Unfortunately, fundamental questions remain unanswered: What are the health effects? What are acceptable exposure levels? What should we do?

*The anecdotal reports associated with the headlines have people worried, but scientific evidence based on sound research seldom receives the same level of attention. A recent publication of the American College of Occupational and Environmental Medicine (ACOEM), titled Adverse Human Health Effects Associated with Molds in the Indoor Environment, reports that:*

- "Exposure to molds and other fungi and their spores is unavoidable except when the most stringent of air filtration, isolation, and environmental sanitation measures are observed, e.g., in organ transplant isolation units."
- "Molds and other fungi may adversely affect human health through three processes: 1) allergy; 2) infection; and 3) toxicity. One can estimate that about 10% of the population has allergic antibodies to fungal antigens. Only half of these, or 5%, would be expected to show clinical illness. Furthermore, outdoor molds are generally more abundant and important in airway allergic disease than indoor molds — leaving the latter with an important, but minor overall role in allergic airway disease. Allergic responses are most commonly experienced as allergic asthma or allergic rhinitis ("hay fever")."

Other important conclusions from the article:

- "Most fungi generally are not pathogenic to healthy humans."
- "Mycotoxins are relatively large molecules that are not significantly volatile; they do not evaporate or 'off-gas' into the environment, nor do they migrate through walls or floors."
- "Mold spores are present in all indoor environments and cannot be eliminated from them."
- "Molds growing indoors are believed by some to cause building-related symptoms. Despite a voluminous literature on the subject, the causal association remains weak and unproven, particularly with respect to causation by mycotoxins."
- "After the source of moisture that supports mold growth has been eliminated, active mold growth can be eliminated."

And finally:

- "Current scientific evidence does not support the proposition that human health has been adversely affected by inhaled mycotoxins in the home, school, or office environment."

The article includes the following recommendations:

- "To reduce the risk of developing or exacerbating allergies, mold should not be allowed to grow unchecked indoors. When mold colonization is discovered in the home, school, or office, it should be remediated after the source of the moisture that supports its growth is identified and eliminated."

Approximately 69,000 species of fungi are described in the scientific literature out of an estimated total that may exceed 1.5 million and make up approximately 25 percent of the earth's biomass. We will probably never know the interactive effects of all these organisms, but by evaluating the best information available, we should be able to apply our resources effectively to provide and maintain healthy indoor environments.

The complete ACOEM article can be downloaded from the web site listed in the table below. The other resources listed provide some of the best information available about mold and indoor air quality, including guidelines for assessment and remediation.

## List of Guidelines and Resources for Assessment and Remediation of Fungal Contamination

Organization	Title or Resource	Web Site
American College of Occupational and Environmental Medicine	Adverse Human Health Effects Associated with Molds in the Indoor Environment	<a href="http://www.acoem.org/guidelines/pdf/mold-10-27-02.pdf">www.acoem.org/guidelines/pdf/mold-10-27-02.pdf</a>
American Conference of Governmental Industrial Hygienists	Bio-aerosols Assessment and Control	<a href="http://www.acgih.org">www.acgih.org</a>
American Industrial Hygiene Association	Report of the Microbial Growth Task Force	<a href="http://www.aiha.org">www.aiha.org</a>
Association of Wall and Ceiling Industry	Mold: Cause, Effect and Response	<a href="http://www.awci.org">www.awci.org</a>
International Society of Indoor Air Quality and Climate	Guidelines for IAQ in Schools (task force)	<a href="http://www.isiaq.org">www.isiaq.org</a>
New York City Department of Health	Guidelines on Assessment and Remediation of Fungi in Indoor Environments	<a href="http://www.nyc.gov/html/doh/html/epi/moldrpt1.html">http://www.nyc.gov/html/doh/html/epi/moldrpt1.html</a>
US Environmental Protection Agency	Indoor Air Quality Tools for Schools	<a href="http://www.epa.gov/iaq/schools/tools4s2.html">www.epa.gov/iaq/schools/tools4s2.html</a>

More information about Indoor Air Quality is available on the Internet:

### **U.S. Environmental Protection Agency**

<http://www.epa.gov/>

### **Washington State Department of Health**

<http://www.doh.wa.gov/>

### **Office of Superintendent of Public Instruction**

<http://www.k12.wa.us/>

### **Northwest Air Pollution Authority**

<http://www.nwair.org/>

### **Washington State Cooperative Extension Energy Program**

<http://www.energy.wsu.edu>

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