

Your Health & The Environment

News from the University of Rochester Environmental Health Sciences Center

www2.envmed.rochester.edu/envmed/EHSC/index.html

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Did you know?

- 675 children were lead poisoned in Monroe County in 2005.
- Over 3,000 students in the Rochester City School District suffer from asthma.
- Asthma is one of the leading causes of missed school and work.
- Nearly half of all homes with young children have pesticides stored within reach.
- Carbon monoxide causes thousands of deaths or poisonings or every year due to items used in the home like old furnaces, generators or space heaters.



Visit the Healthy Home to learn more about home health hazards!



Rochester's Healthy Home

The "Healthy Homes" movement arose from the observation that some of the most significant environmental health hazards, particularly those that disproportionately affect children, the poor, and minorities, are related to home-based environmental hazards. These threats include lead, mold and other potential asthma triggers, carbon monoxide, asbestos, and radon.

The University of Rochester's Environmental Health Sciences Center (EHSC) has coordinated a community-based partnership with two community groups, the SouthWest Area Neighborhood Association (SWAN) and the Rochester Fatherhood Resource Initiative (RFRI), to teach people about these hazards through a hands-on model "healthy home" museum at a home in downtown Rochester.

The Healthy Home provides property owners, contractors, residents and professionals with hands-on demonstrations of various low-cost methods for reducing home health hazards. Also, with the implementation of the new city lead law in July 2006, it is expected that the demand for education and training in effective, low-cost lead hazard control to increase.

The Healthy Home also educates about the health impacts of these hazards and provide resources and information for addressing these hazards in homes.



Students from SWAN's Building Blocks Program gave Rochester's Mayor Duffy a tour this summer. They are in the 'Asthma Bedroom' that was created with support from Regional Community Asthma Network (RCAN).



Location: 700 West Main Street.

Open hours:

*Wednesday 3-5 pm, Saturday noon-2pm

*Or you may schedule a tour by contacting SWAN; Valerie Ingram at 436-8201 x 1391 or valerieingram2005@yahoo.com

Website: www2.envmed.rochester.edu/envmed/ehsc/outreach/CommunityPartners/CommunityPartnersHH.html

The Healthy Home has an Advisory Board for technical and community support. Since it opened in June 2006, over 400 people have visited the Healthy Home.

The goal of the Healthy Home is to provide an accessible, hands-on opportunity to increase the community's residents, landlords, local organizations, and government officials awareness of home environmental health hazards and how to reduce their risk.

For more information see Page 3.

Toxicology Training Program

Welcome to the new students in the Toxicology Training Program!

Sarah Latchney, St. Lawrence University, B.S. 2006 Biology

David McMillan, Vanderbilt University, B.S. 2006 Biomedicine Engineering and Chemistry

Meghan Blair, Philadelphia College of Pharmacy Science B.S. 2005 Pharmacy/Toxicology

Ming Kung, Syracuse University, College of Environmental Science, B.S. 2002 Chemistry

Jennifer Head, Potsdam University, B.S. 2006 Biochemistry

Kurt Bertram, Northeastern University, B.S. 2004 Toxicology



The PhD program in Toxicology builds upon the University of Rochester's strength in environmental health research. Areas of emphasis include neurotoxicology, immunotoxicology, osteotoxicology, carcinogenesis, and molecular, pulmonary, reproductive and developmental toxicology. It is administered by the Department of Environmental Medicine.

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Research News

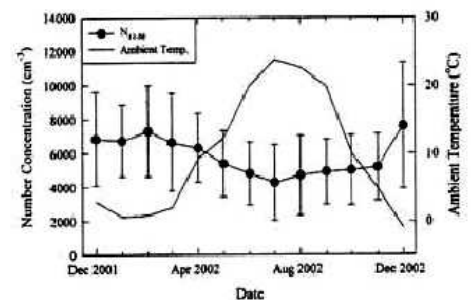
Allen Silverstone is a member of the Steering Committee for a study funded by Agency for Toxic Substances and Disease Registry (ATSDR), "Polychlorinated Biphenyls (PCB) Exposure and Adverse Health Effects in Anniston, Alabama." This is the community in which the bulk of PCBs were manufactured by Monsanto since 1929 and is estimated to be the highest exposed community in the world. Researchers have surveyed 800 of the 12,000 residents and have obtained physical measurements and blood samples from over 600 individuals.

Tom Gasiewicz is a member of the Scientific Advisory Board and Allen Silverstone is an investigator funded by the Diabetes Risk Project which is using data obtained from the Alabama community. The Diabetes study has found a prevalence rate of diabetes in obese adults of 38-39% in ages 45-75; rates of 20-35% in overweight individuals in the same age group, and a rate of 23-30% in people with normal BMI (body mass index). Even factoring in that more than 51% of the study members are African American, and given the 34% incidence of obesity, these results are considerably higher than can be expected, not only overall for the U.S., but for Alabama and the southeast. 3-4% of the participants in the study have been found to have undiagnosed diabetes, and 20-30% fulfill the criteria of being "pre-diabetic." Laboratory results indicate that many of these individuals that have been diagnosed with type II diabetes may in fact have autoimmune diabetes. It is expected that final analysis of the data and production of papers will begin in February/March.

PCBs- (polychlorinated biphenyls) are a mixture of chemicals that are no longer made in the U.S. but still found in the environment. They were often used as coolants and lubricants in items like electrical transformers. Health effects include acne-like skin conditions for adults and neurobehavioral & immunological changes in children. PCBs are known to cause cancer in animals. <http://www.atsdr.cdc.gov/tfacts17.html>

Diabetes- is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily life. The cause of diabetes continues to be a mystery, although both genetics and environmental factors such as obesity and lack of exercise appear to play roles. There are 20.8 million children and adults in the United States, or 7% of the population, who have diabetes. While an estimated 14.6 million have been diagnosed with diabetes, unfortunately, 6.2 million people (or nearly one-third) are unaware that they have the disease. <http://www.diabetes.org/home.jsp>

Researchers, Mark Utell, William Beckett, John Bisognana, Wojciech Zareba, David Oakes, and Philip Hopke of Clarkson University, are conducting an epidemiological study in adults living in Monroe County who have recently had a myocardial infarction (heart attack) or angina pectoris (chest pain or discomfort due to coronary heart disease) and are enrolled in the Strong Cardiac Rehab Program. These people may be particularly sensitive to effects of inhaled particles in air pollution. The purpose of the study is to see whether high levels of airborne ambient ultra fine particles in Rochester are associated with cardiac symptoms, any detectable changes in EKG during exercise, or in white blood count, fibrinogen, or C-reactive protein (markers of clotting and inflammation). 80 people are being enrolled and will each be followed through 10 weeks of cardiac rehabilitation. The study is supported by New York State Energy Research and Development Authority (NYSERDA), the University of Syracuse Center of Excellence for Research in Indoor Air Quality, and by the USEPA Particle Center of the University of Rochester.



'The higher concentrations of ultrafine particulates in winter months were probably related to the increased nucleation events of combustion exhaust emitted from motor vehicles as well as lower average mixing heights and inversions that occur more frequently in winter.'

-Chart and caption from Environmental Science and Technology, Characteristics of Nucleation and Growth Events of Ultrafine Particles Measured in Rochester, NY

Other News:

William Beckett presented at the Mary Parkes Asthma Center annual conference on November 9th. He summarized recent research on the association of indoor air quality with asthma incidence and severity in children and highlighted some of the more interesting recent studies worldwide that have examined this issue. There is a great deal of current research on the effects of the home environment and the outdoor ambient environment on contributions to asthma.

At the 2006 Toxicology Convocation, Lisa Opanashuk was recognized for her outstanding teaching contributions. She was presented with The Alumni Award for Excellence in Graduate Education. Rich Miller received the Graduate Student Society Faculty Award for his outstanding teaching contributions. Toxicology Student, Pete Vitiello, received the Gilbert B. Forbes Prize in Pediatrics for his outstanding research.

Kate Kuholski, Project Manager at the Center for Science Education and Outreach, recently presented at the Northeast Regional Conference on Eliminating Childhood Lead Poisoning, Implementing Healthy Homes Programs, and Combating Indoor Air Quality and at the American Public Health Association's Annual Meeting and Exposition.

The EHSC is one of the "Centers of Excellence" sponsored by the NIEHS (P30 ES01247). The Center was established in 1975 and emphasizes the study of. "Environmental Agents as Modulators of Human Disease and Dysfunction." The major goal is to discover and describe the underlying mechanisms of action of toxic substances and to provide a sound scientific basis for evaluating the health risks posed by chemical exposures to human populations.



Rochester's Healthy Home

Rochester's Healthy Home emphasizes four main areas of concern: lead, asthma triggers (including mold), household chemicals, and indoor air quality. For each topic, hands-on displays describe the health risk, the home-based hazards, and ways to reduce the hazard.

Low-cost solutions are emphasized, and particular attention is given to strategies for addressing these risks in low-income rental housing. Each visitor is guided toward local and national resources that are appropriate for their situation.

Evaluation is a strong component so we can determine if this was effective and help other communities develop a similar model. This is done through evaluations and Action Sheets (forms that state the action that the visitor will carry out in order to make his or her home healthier) that visitors fill out at the end of their guided tour. A copy of the Action Sheet will go to the visitor and another copy will be kept at the Healthy Home. A representative from the Healthy Home will make follow-up phone calls to the visitors in order to evaluate the actions taken.

Lead poisoning remains the most significant childhood environmental health threat in many older urban areas. Children are usually lead poisoned in their homes because of exposure to leaded dust, leaded paint, and lead in the soil.



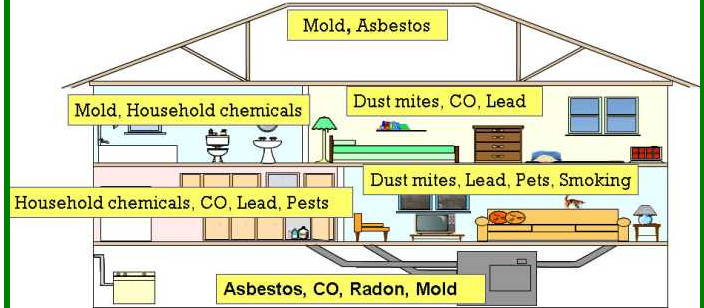
Asthma, with contributions from household triggers including mold (which often grows in area of the home that are moist and warm), pests, other allergens, and indoor tobacco use, is another major health issue linked to indoor environments.

Household chemicals may also negatively impact residents' health. People may be exposed to toxic chemicals from use or storage of herbicides, pesticides, or cleaning products in their homes.



Poorly functioning heaters, generators, old insulation, and cracked foundations may disproportionately affect low-income residents of poor-quality housing to carbon monoxide, asbestos, and radon, respectively.

Older homes as well as newer homes face the risk for these as well as other home health hazards. It is important to find out more about possible health hazards that could be in your home. Be sure to visit the Healthy Home to find out more!



Kitchen display



Lead Safe Work Practices class



Medical student giving a tour of the Asthma Bedroom



Asthma support group meeting



Household chemical Look-a-Like[®] display provided by the [Injury Free Coalition for Kids](#)



Lead hazard window display

Visitors are provided with practical steps that they can take to reduce their risks such as:

Asthma Triggers

Asthma cannot be cured, but it can be controlled

- Follow your asthma action plan
- Reduce fabrics and pillows in the bedroom
- Contact:
Regional Community Asthma Network
442-4260
NYS Smoker's Quitline
1-866-697-8487

Lead Hazards

Lead poisoning cannot be treated, it can only be prevented

- Get your child and home tested
- Use lead safe work practices
- Contact:
City of Rochester 428-LEAD
Monroe County Department of
Public Health 753-5087,
Get the Lead Out (GLO) 325-5116
NeighborWorks 325-4170

Home Chemicals/

Unintentional Injuries

- Clean safely, clean often
- Safely store household chemicals, use a lock on cabinets, dispose of properly
- Use cribs and car seats safely
- Contact:
Poison Control Center 275-3232,
Injury Free Coalition for Kids 275-9748,
Monroe County Household Hazardous
Waste Program 760-7600

Indoor Air Quality

- Find and safely clean off any mold you see with mold cleanser and water.
- Find and fix water leaks & moisture problems immediately
- Install a carbon monoxide detector.
- Contact:
Monroe County Department of
Public Health 753-5455,
City of Rochester Fire Dept. 428-1362

Community Outreach & Education Core (COEC)

Welcome to new staff members:



Katy Wack Joseph is the new Science Educator at the Life Sciences Learning Center. She received her B.S. from Carnegie Mellon where she majored in Biology. Then, she worked at MIT for five years doing liver tissue engineering research and community outreach and education. During this time, Katy earned her M.S. in Toxicology and MA teaching certification in Biology and began directing the Community Outreach and Education Program at MIT's Center for Environmental Health Sciences. She is excited to bring her research and teaching background together at the Life Sciences Learning Center.



Amy Crosby is the new Administrative Assistant for the Life Sciences Learning Center. She joins us from the Margaret Warner Graduate School of Education and Human Development where she worked as an accountant for seven years.

Amy has her B.S. in English Education from SUNY Brockport. She looks forward to applying her education and experience at the LSLC.



Sue Mroczek is the new Laboratory Technician for the Life Sciences Learning Center. She has served as a liaison between research scientists and production engineers for commercializing new products into the Health Imaging market. Sue recently worked as an instructor and conducted supplemental in-school science programs to western New York school classrooms. She received her B.S. in Biology and Education from SUNY Brockport.

The University of Rochester Environmental Health Sciences Center's Community Outreach and Education Core provides environmental health information, resources, and referrals in response to community members' environmental health questions, and promote environmental health sciences education for students and teachers.

Environmental Health Institute

Twenty-four high school biology and chemistry teachers from throughout New York State attended a four-day environmental Health Institute from July 17-20, 2006. The Environmental Health Institute included activities to demonstrate ways that teachers can support students in:

- Understanding basic concepts of risk assessment, toxicology, epidemiology, healthy homes, and environmental justice.
- Solving environmental health problems by applying, analyzing, synthesizing, and evaluating information from research.
- Conducting hands-on laboratory activities to assess toxic risks from chemicals in their environment.
- Using simple GIS (Geographic Information System) and internet-based technologies to map local environmental health hazards.
- Conducting a "healthy home" assessment and analyzing information on risks, prevention, and remediation.

The Environmental Health Institute also included presentations from faculty members, Shanna Swan, Bill Beckett and Alison Elder.

Following the Environmental Health Institute, seven biology and seven chemistry teachers returned to the University of Rochester for four days (August 1-4) to develop engaging, new curriculum modules for our My Environment, My Health, My Choices project.

These thirteen new lessons are designed to encourage students to develop their understanding of science content by addressing environmental health problems such as lead, mold, radon, household chemicals, and carbon monoxide.



Teachers visiting the Healthy Home

These lessons are posted on our web site at:

<http://www2.envmed.rochester.edu/envmed/ehsc/outreach/index.html>

New Grants

Dina Markowitz, COEC Director and Director of the Life Sciences Learning Center and the Center for Science Education and Outreach was recently awarded two new grants for the development and dissemination of high school biology curriculum materials.

*A 5-year grant (\$1,331,742) from the NIH National Center for Research Resources will be used to develop and disseminate four curriculum modules based on biomedical research topics such as health effects of ultrafine air particulates, use of neural stem cells as gene therapy vectors, genomic technologies used to identify pandemic-specific genes of *Vibrio cholerae*, and Neurobiology of vision repair.

This project will involve collaboration with University of Rochester researchers Gunter Oberdorster (Environmental Medicine), Mark Noble (Biomedical Genetics), Krystal Huxlin (Ophthalmology) and Michelle Dziejman (Microbiology and Immunology).

*A two-year grant (\$150,000) from the Arthur Vining Davis Foundations will fund the development of curricula focusing on several areas in cancer biology. Curricula will include several case studies and hands-on activities to introduce high school students to the molecular mechanisms, diagnosis and treatments of cancer.

*Kate Kuholski and Katrina Korfmacher are collaborators on a new grant project recently awarded to the SouthWest Area Neighborhood Association (SWAN). This grant from the Center for Environmental Information's Community Action for a Renewed Environment (CARE) will fund a project for education on mobile air toxins and what the community can do to reduce them.

*The Healthy Home was recently awarded a \$24,000 grant from the New York State Department of Environmental Conservation Environmental Justice Community Impact Research Grant, a \$5,000 grant from the NYS Department of Health, Office of Minority Health, and a \$19,000 grant from the Rochester Area Community Foundation.

Please feel free to contact [Kate Kuholski@urmc.rochester.edu](mailto:Kate.Kuholski@urmc.rochester.edu), with questions or comments regarding this e-newsletter.

Related Websites:

National Institute of Environmental Health Sciences (NIEHS)

<http://niehs.nih.gov>

Department of Environmental Medicine

<http://www2.envmed.rochester.edu/envmed/TOX/index.html>

Toxicology Training Program

<http://www2.envmed.rochester.edu/envmed/tox/index.html>

Community Outreach and Education Core

<http://www2.envmed.rochester.edu/envmed/ehsc/outreach.html>

Center for Science Education and Outreach

<http://cseo.envmed.rochester.edu/projects.html>

Rochester's Healthy Home

<http://www2.envmed.rochester.edu/envmed/ehsc/outreach/CommunityPartners/CommunityPartnersHH.html>

University of Rochester's Environmental Health Sciences Center (EHSC)

<http://www2.envmed.rochester.edu/envmed/EHSC/index.html>

SouthWest Area Neighborhood Association (SWAN)

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

Rochester Fatherhood Resource Initiative (RFRI)

<http://www.rfriweb.org/index.html>

City of Rochester

<http://www.ci.rochester.ny.us/PublicSafety/lead/lead.cfm>

City of Rochester Fire Department

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

Get the Lead Out (GLO)

<http://www2.envmed.rochester.edu/envmed/ehsc/outreach/CommunityPartners/CommunityPartnersGLO.html>

Injury Free Coalition for Kids

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

Monroe County Department of Public Health

<http://www.monroecounty.gov/health/lead-poisoning.php>

<http://www.monroecounty.gov/health-faq.php>

NeighborWorks

<http://www.nwrochester.org/index.html>

Monroe County Household Hazardous Waste Program

<http://www.monroecounty.gov/des-hhw.php>

NYS Smoker's Quitline

<http://www.health.state.ny.us/nysdoh/smoking/quitline.htm>

Poison Control Center

<http://www.aapcc.org/Centers/flpc.html>

Regional Community Asthma Network (RCAN)

<http://www.rcanasthma.com/>