

Rochester's Healthy Home

Toxicology Training Program

Welcome to the new students in the Toxicology Training Program!

Sarah Latchney.

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.

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.

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,

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.

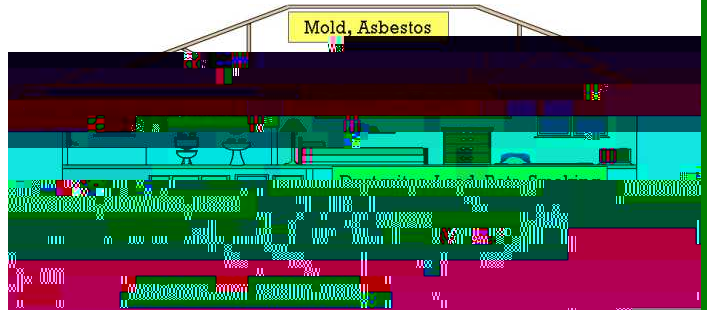
Household chemicals may also negatively impact residents' health. People may be exposed to toxic chemicals from use or storage of herbicides, pesticides, or cleaning products in their homes.

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!

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

Indoor Air Quality



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.

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*

