

Beyond Pesticides' 25TH Anniversary Gala Honors Leaders

The following three pages profile the recent work of the three recipients of Beyond Pesticides' "Dragonfly Award," which will be presented at the organization's 25th Anniversary Gala Dinner in Washington, DC, May 18, 2006. Actor and activist Ed Begley, Jr. will MC. Author and scientist Sandra Steingraber and Beyond Pesticides board members will present awards. For more information on attending the Gala and the following National Pesticide Forum, see www.beyondpesticides.org/forum.



U.S. Rep. Rush Holt Seeks to Protect Children from Pesticides

Since his election to the U.S. House of Representatives in 1998, Rush Holt (D-NJ) has been a tireless advocate for children's environmental health. An original sponsor of the *School Environment Protection Act*, he co-chairs the Congressional Children's Environmental Health Caucus. He also focuses his energy on sustainable development, medical research, farmland protection, human rights and more. Prior to serving as a Member of Congress, he was assistant director of Princeton University's Plasma Physics Laboratory.

Responding to an alarming study in the *Journal of the American Medical Association* (JAMA) on detailing the dangers of pesticides to children, U.S. Representative Rush Holt held an August 3, 2005 press conference to promote federal legislation that will protect students and employees from exposure to these chemicals at schools. "This study confirms that action is necessary to prevent our children from being poisoned on the playground," said Rep. Holt. "The current patchwork of state laws is inadequate to protect our most precious commodity." The study, "Acute Illnesses Associated with Pesticide Exposure at Schools," was published in the July 27, 2005 issue of JAMA (Vol. 294, No. 4).

Also participating in the press conference was New Jersey Department of Environmental Protection Commissioner Bradley Campbell; state and local elected officials; staff from the New Jersey Environmental Federation and Beyond Pesticides; medical experts; and, education activists supporting Holt's legislation. "Mr. Holt's legislation is needed to establish a uniform standard of protection from pesticide exposure in schools," said Jane Nogaki of the NJ Environmental Federation. "Kids and pesticides just don't mix."

The peer-reviewed JAMA study analyzed 2593 poisonings from 1998 to 2002. It found that incidence rates of acute pesticide-related illnesses among children increased significantly from 1998 to 2002. Over two-thirds of poisonings were associated with pesticides used at schools. The study pointed to the absence of federal law regulating school pesticide use. Rep. Holt's *School Environment Protection Act of 2005* (SEPA), H.R. 110, requires local educational agencies and schools to implement integrated pest management systems to minimize the use of pesticides in schools, and provide for notification of the use of such chemicals. "Mr. Holt's legislation is needed to protect children from a daily dose of chemicals in their

classrooms, playgrounds, and athletic fields," said Michele Roberts of Beyond Pesticides.

Specifically, SEPA:

- Only permits the use of conventional pesticides on school grounds after the school has followed an approved safe pesticide management program and it has been determined that a pest cannot be managed using the least toxic management practices and products;
- Requires that school staff and parents be notified 72 hours prior to the use of the pesticide; and,
- Mandates the posting of warning signs 72 hours in advance of a pesticide application and are required to remain in place for 24 hours.

"Our children deserve to learn and play in a safe environment," said Rep. Holt. "This study demonstrates the need to establish a national standard governing the use of pesticides. I call on Congress to pass the *School Environment Protection Act.*"



Pesticide Reform: Its accomplishments and challenges

Norma Grier is the executive director of the Northwest Coalition for Alternatives to Pesticides (NCAP), an organization that she co-founded in 1977. For more than three decades she has been a grassroots leader in reducing and eliminating unnecessary pesticide use. Ms. Grier also serves on the board of directors of the Oregon League of Conservation Voters. The following piece is in her own words.

Today, the pesticide reform movement is alive and well because more people have an understanding that pesticides are everywhere. Pesticides, by design, are harmful to life, and they pollute our water, air, food, and bodies. A growing population recognizes the urgent need and opportunities for changing how pesticides are used. It's a rewarding time to be active in pesticide reform.

The current depth of public concern about pesticides is in sharp contrast to the 1970s. Following the uproar created by Rachel Carson's *Silent Spring*, Congress approved sweeping changes to the national pesticide law in 1972. In the decade that followed, most people believed that government had taken care of the pesticide problem.

Now, pesticides have captured attention again, in large part due to the visionary, tireless and courageous efforts of numerous grassroots activists, community groups, environmental scientists, government and elected officials, and donors. More people are deciding every day to avoid pesticides. They vote with their dollars at the grocery store when they reach for organically grown products. They choose lawncare without pesticides so that their children and pets can romp in the grass without worrisome exposure. They demand pure drinking water. They insist on a pesticide-free environment at their child's school. People expect their homes, neighborhoods and schools to be safe for families and loved ones.

This new reality presents a huge opportunity for pesticide reform organizations. Here are a couple examples of how my own organization has made progress.

Pesticide-free solutions to home and garden pest problems are in high demand. In the last two years, the Northwest Coalition for Alternatives to Pesticides (NCAP) has signed up 10,000 people to participate in our Healthier Homes and Gardens program. Participants receive a monthly emailed tip about managing common pests without pesticides, and they get access to a hotline to answer specific questions. Our organization recruited people at home and garden shows, at community events, and through working with supportive mail order businesses that put a postcard about the program in their customer's packages. We learned that people are hungry for this kind of information. And further, when given the opportunity, hundreds of people have been willing to lend support on action issues such as contacting EPA about the immorality of testing pesticides on humans.

Since three-quarters of U.S. pesticides are used to grow food and fiber, it's important to promote alternatives in agriculture. NCAP's sustainable agriculture program is working on pota-

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toes, because more than half the nation's potatoes are grown in the Northwest, and potatoes use more pounds of pesticides per acre than any crop grown in our region.

In collaboration with the Shoshone-Bannock Tribes, we set up a demonstration project on the Fort Hall Indian Reservation in Idaho. A "green manure" mustard crop was grown after wheat harvest and before potato planting to eliminate the need for fumigants. In the first year, in addition to preventing application of 9,000 pounds of metam sodium, the farmer's increased profit using the green manure crop was \$280 per acre. Those numbers catch a grower's attention. Soon, because of a collaborative effort led by NCAP, Idaho will be famous not only for its potatoes, but its organic potatoes.

The picture is not entirely bright. The pesticide industry's power gives it unprecedented access to decisions about pesticide regulation. The pesticide industry's marketplace influence runs deep and strong. But, there are plenty of signs that people are tired of paying for the pesticide industry's bill of goods including cancer, birth defects, contaminated air and water, and unhealthy soils. Parents are rejecting pesticides and convincing their communities to establish pesticide-free parks. Organics is the one growth sector in agriculture. Alternative products are occupying more shelf space in garden stores. These hopeful signs show that the pesticide reform movement is successfully attracting more people. It's exactly what we need to do as we build towards a world free of pesticides. — Norma Grier



A Case for Revisiting the Safety of Pesticides

By Theo Colborn

Theo Colborn, Ph.D. is the director of the Endocrine Disruption Exchange, Inc., which she founded in 2003, and a former senior scientist at the World Wildlife Fund. Her research on endocrine disruptors led to her co-authorship of *Our Stolen Future*. This book shocked the public, providing evidence that human-made chemicals in the environment, including pesticides, disrupt the endocrine system and lead to serious health impacts.

Editors Note: *The following are excerpts from the discussion section of "A Case for Revisiting the Safety of Pesticides: A Closer Look at Neurodevelopment," by Theo Colborn, Ph.D., published in the January 2006 issue of Environmental Health Perspectives (Vol. 114, No. 1). See <http://ehp.niehs.nih.gov/members/2005/7940/7940.html> for the full article.*

There is a great deal of uncertainty about the neurodevelopmental effects of pesticides among the human studies presented [in this article]. Exposure has become too complex because of the hundreds of pesticide active ingredients on the market, confounded by background exposure to industrial chemicals that share similar effects. In addition, functional changes are expressed over a continuum, making it difficult to document the damage, which often is expressed as more than one lesion and at different intervals or stages of development.

Although the information is available, EPA has rarely used open literature in its risk assessments, generally using only data submitted by manufacturers. Industry continues to use traditional toxicologic protocols that test for cancer, reproductive outcome, mutations, and neurotoxicity, all crude end points in light of what is known today about functional end points. EPA should accept non-guideline, open literature to determine the toxicity of a chemical. For example, Brucker-Davis published a comprehensive review of the open literature in which she found 63 pesticides that interfere with the thyroid system. Yet, to date, EPA has never taken action on a pesticide because of its interference with the thyroid system.

The amazing litany of diverse mechanisms discovered in the series of chlorpyrifos studies raises serious questions about the safety of not only chlorpyrifos (CPF) and the other organophosphates (OPs), but all pesticides in use today. Most astounding is the fact that a large part of chlorpyrifos toxicity is not the result of cholinesterase inhibition, but of other newly discovered mechanisms that alter the development and function of a number of regions of the brain and central nervous system. These findings send a warning that even though an OP pesticide like CPF may have a very high EC50 for acute toxicity as a result of cholinesterase inhibition, it may have other toxic strategies that are far more egregious than cholinesterase inhibition.

The knowledge gained from a decade of [chlorpyrifos and 2,4-D brain studies] not only demonstrates the insidious nature of chlorpyrifos and 2,4-D exposure, but it also demonstrates the weaknesses in current standard practices for determining the

safety of a pesticide or any other synthetic chemical. Even an EPA analysis of developmental neurotoxicity studies stated that EPA's current developmental neurotoxicologic testing protocol is "not a sensitive indicator of toxicity to the offspring" and urged EPA "to further consider if it will use literature data." In the case of CPF and 2,4-D, it appears that those who reviewed the data failed to understand its significance or had other reasons to ignore it. EPA needs to convene a panel of independent experts to review these studies for applicability to determine if and how they can be used for registration.

In most animal studies pesticides are administered at high oral or subcutaneous doses orally, not reflecting that, for most humans and wildlife, exposure could in many instances be dermal or via inhalation and, in many cases, over a long period of time at low doses. EPA currently requires chronic toxicity studies, but it is locked into using high doses to elicit effects and has not overcome the difficulty of detecting effects from chronic or ambient exposure or low doses. In addition, the human pharmacokinetics of pesticide exposure can either enhance or reduce the health impacts depending on individual variations.

In the future, the most efficient, comprehensive assays will take advantage of the fact that most chemicals have more than one effect in one system. Cross-disciplinary teams will be required to design these assays so that every organ system is carefully screened for damage. And most important, this will reduce by thousands the numbers of animals needed for testing. However, improved neurodevelopmental tests with laboratory animals will not fulfill their greatest potential if they are not backed up by better batteries of tests to detect functional disabilities in children.

To protect human health, a new regulatory approach is also needed that takes into consideration this vast new knowledge about the neurodevelopmental effects of pesticides, not allowing the uncertainty that accompanies scientific research to serve as an impediment to protective actions.
