1996 ~ 2006 10th Anniversary Year

The Ribbon

BCERF

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A Newsletter of the Cornell University Program on Breast Cancer and Environmental Risk Factors (BCERF)

BCERF returns to Long Island for its Fall Regional Cancer and Environment Forum

Event opens by honoring Senator Carl L. Marcellino

Senator Carl L. Marcellino addresses the group after being presented with a plaque of recognition by BCERF Director Dr. Rodney Page.

At the suggestion of the staff of Senator Carl L. Marcellino (District 5, representing parts of Nassau and Suffolk Counties on Long Island, New York), the Fall Regional Cancer and Environment Forum took place at the beautiful Planting Fields Arboretum State Historic Park, in Oyster Bay. Approximately 65 activists, cooperative extension educators, state and local health and environment agency staff people, and other community members participated in this program held on September 28, 2006. The day opened with the recognition of Senator Marcellino's support for the BCERF program.

In organizing these programs, BCERF tries to highlight some issues of particular interest to the region where the event is taking place, such as research addressing a local study population, or local policies relating to risk reduction. In addition. we always highlight a current BCERF project, so that new as well as veteran participants of the BCERF Forums can learn about or stay current with what we do.

Shift Work, Light at Night, and Breast Cancer on Long Island.

Dr. Erin O'Leary presented her recently published research, *Shift Work, Light at Night, and Breast Cancer on Long Island* [American Journal of Epidemiology 164 (4), 358-366]. This study, part of the Long Island Breast Cancer Study Project, helps examine the hypothesized relationship between breast cancer risk and circadian rhythm disruption. This hypothesis, as stated in the published paper:

> *...involves the hormone melatonin, which is secreted by the pineal gland and follows a circadian rhythm according to the light:dark cycle in most people; melatonin levels are low during the day and peak at night ... Exposure to artificial lighting during the night could suppress the normal nocturnal rise in melatonin, which could in turn increase circulating estrogen levels or inhibit tumor anti-proliferative mechanisms and possibly increase breast cancer risk.*

Dr. O'Leary described the study population and methods. The 576 women with breast cancer (cases) and 585 population-based controls were interviewed about their exposure histories; in this case, meaning their employment history specifically with regard to night shift work, and their light at night at home. This study generated mixed evidence for the hypothesis, Dr. O'Leary explained. While many other studies have reported an elevation in breast cancer risk with night shift work, this one did not. (In fact, Dr. O'Leary's group found overnight shift workers to be at lower risk than women never working shifts.) They did, however, find an increased risk in women who frequently turned on

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lights during sleep hours. This could indicate some support for the hypothesis, or it could be the result of "response bias," or, different recall between cases and controls. Because of the inconsistency of research results to date on this topic, Dr. O'Leary and her co-authors recommend future studies with improved methods for measurement of shift work, nighttime light exposure, melatonin levels, and any genetic variations which might affect an individual's response to these exposures.

The Coram, Mt. Sinai, Port Jefferson Station Follow-Up Investigation Report

A team of four New York State Department of Health (NYS DOH) staff members presented the results of this study, which is part of the New York State Cancer Surveillance Improvement Initiative. The study addressed seven contiguous ZIP code areas within Long Island's north shore, which were identified as having a higher than expected incidence of breast cancer in the time period 1993 to 1997. The four presenters – Maria J. Schymura, Director, New York State Cancer Registry; Don Miles, ATSDR/Long Island Section, Bureau of Environmental Exposure Investigation; Kenneth G. Bogdan, Bureau of Toxic Substance Assessment; and Gena Gallinger, Cancer Mapping Coordinator – gave background and overviews of the major parts of the study.

It is important to keep in mind that this investigation was designed to be able ***to generate hypotheses*** *– an important step toward being able to identify the causes of the breast cancer rates in this region. This broad-based population-level study was focused on identifying any unusual environmental or other factors that might explain the locally elevated breast cancer incidence, and which might call for further study.*

The NYS DOH presenters provided information on the main elements of the investigation:

- **Epidemiologic Evaluation.** In this part of the investigation, epidemiologists analyzed breast cancer data, known breast cancer risk factors and additional information about women living in the study area. They concluded that the higher than expected breast cancer rate in this area does not stand out as significantly different from the rest of NYS when statistics accounted for income and education (commonly accepted surrogates for some known risk factors, such as delayed childbearing, *but may also include environmental factors*). This part of the study also analyzed the length of residence in the study area for those diagnosed with breast cancer. They concluded that, "an appreciable proportion of women with breast cancer in the area may be recent arrivals," which makes the environmental exposures of this subset of women in the study area less relevant.
- **Environmental Exposure Evaluation.** This part of the investigation focused on what contaminants and levels of contaminants might be different or unusual in the study area compared to the rest of NYS or the county. NYS DOH researchers examined multiple databases for information on: air quality; in-home radon; pesticide use; hazardous waste sites; industrial sites; public and private drinking water; electromagnetic fields; as well as incidents such as spills, waste water discharges and fish advisories. Any unusual findings – such as several elevated air contaminants and four particular pesticides of concern – were recommended for the final phase of the investigation, the Integration Evaluation (see below). However, for the majority of environmental exposures investigated, the study area showed similar or lower levels.

Note: *additional information on all aspects of this study, including the expansive number of environmental exposures considered, the methods for the toxicological evaluation, and details on conclusions can be accessed at: http://www.health.state.ny.us/environmental/investigations/cmp/ or call (800) 458-1158, ext. 27530*

- **Toxicological Evaluation.** NYS DOH researchers developed a classification scheme for the potential of 167 substances to increase breast cancer risk. In this system, used for the first time in this project, substances are classified by a weight-of-evidence approach into one of four groups (one with three sub-classifications), spanning from "known risk factor for human breast cancer" to "unlikely to be a risk factor for human breast cancer." This process resulted in the following category assignments:

Category	Number of agents	Example
1. Known	1	x-rays
2A. Probable	21	second-hand cigarette smoke
2B. Possible	63	dieldrin
2C. Potential	44	DDT
3. Not classifiable	35	alachlor
4. Unlikely	3	hexane (solvent)

- **Integration Evaluation.** Information gathered and reviewed from the above three efforts was then used to evaluate the breast cancer (and other health) risks of any elevated contaminants in the study area. Researchers considered: confidence in the environmental data to estimate exposure, classification of the contaminant as a risk factor for human breast cancer, and the likelihood that the estimated level of exposure could cause breast

cancer or other health effects. Thirty-one contaminants were evaluated (27 air contaminants and 4 drinking water contaminants). Researchers concluded that none of the contaminants or their mixtures are likely to be related to elevated breast cancer rates in the study area. (Much more information about the methods and results of the Integration Evaluation are available in the NYS DOH's *Final Integration Report*, available through the web site or telephone number in the gray box on page 2.)

NYS DOH recommends continued surveillance of the study area, consistent with other statewide activities, including updating ZIP code-level cancer data, identifying and classifying potential environmental exposures, and providing public health education relating to cancer and other health conditions and environmental exposures. The four NYS DOH representatives took questions during their session and were generous to volunteer to continue discussion into lunch.

Turf Pesticides: Applicator Pilot Study and the Cancer Risk Database.

After lunch, Dr. Heather Clark, Research Associate at BCERF, presented on *Turf Pesticides: Applicator Pilot Study and the Cancer Risk Database*. (Please see the article on this project on page 4.)

Suffolk County's Pesticide Phase-Out Legislation: Panel Discussion

A panel of three discussed various aspects of Suffolk County's Pesticide Phase-Out Legislation. All are members of the county's Pesticide Community Advisory Committee (CAC) (see box below), appointed to oversee and carry out the legislation.

- Amy Juchatz is chair of the Pesticide CAC and works for the Suffolk County Department of Health Services as a Health Program Analyst.
- Joyce Rodler is an integrated pest management specialist with Cornell Cooperative Extension (CCE) of Suffolk County
- Dr. Tamson Yeh is an integrated pest management and turf specialist, also with CCE of Suffolk County.

Suffolk County Code Chapter 380 *"…the purpose of this law is to phase out the use of pesticides by the County for many pest control purposes and to adopt a pest control policy that substantially relies on non-chemical pest control strategies…"*

"…A Suffolk County Advisory Committee (CAC) is hereby created to oversee the implementation of this law by the County Department of Health Services…"

Amy Juchatz discussed the workings of the CAC, which, aside from her and the CCE representatives, is composed of designees from Vector Control, the Commissioner of Parks, the cancer advocacy community, and the medical community. With miles of public beaches, 37,000 acres of parkland, three County golf courses and ownership or leases of over 300 buildings, the legislation's mandate is enormous. Because non-chemical pest control strategies are largely dependent on prevention, The CAC developed a comprehensive Integrated Pest Management Program focused on improving education, sanitation, maintenance, and repair efforts throughout County-owned buildings and properties. The committee also deals with yearly re-evaluations of exemptions, which include situations such as public health emergencies, low-toxicity pesticides used for the control of vectors capable of transmitting diseases, or County-owned property leased to another party.

Forum participants listen to discussion during a question-and-answer period.

Suffolk County CCE is a critical partner in carrying out this legislation, through its Pest Management Program. CCE is not a regulatory agency, but an educational resource, and much of what the CCE panel members, Joyce Rodler and Dr. Tamson Yeh, emphasized were the many ways in which education and community involvement are the keys to successful pesticide phase out. Joyce discussed the "Clean Up, Close Up, Common Sense," program she facilitates, which reaches County employees at all levels and the "Live Bug Show," which gets the message across that "all bugs are not bad," – a key concept with regard to pest management. She described methods and tools for effective communication between all those involved with non-chemical pest control, such as the Pest Communication Log Book, for establishing pest control related interaction between employees, clients, and management in a public building. With ten thousand employees and 1.3 million residents working, doing business, learning or playing in county properties nearly every day, there is a lot of communication needing to happen. With her very creative delivery, Dr. Yeh reiterated many of the basic tenets of integrated pest management (IPM) and the common sense – and creativity – they require on the part of everyone involved.

The Turf Pesticides and Cancer Risk Database is Now Online

By Heather Clark, Ph.D., BCERF Research Associate

The BCERF program has recently launched an easy-to-access, searchable online database that provides cancer risk information for chemicals found in over 2,800 turf and lawn care pesticide products. The ***Turf Pesticides and Cancer Risk Database*** *integrates information on chemicals evaluated for carcinogenicity by the U.S. Environmental Protection Agency (EPA) with 111 active ingredients found in turf and lawn care pesticides registered for use in New York State (NYS).*

Search several ways:

Users can search for information several ways: by product **(1)** or active ingredient **(2)**, or by cancer risk category **(3)**.

Find cancer risk information:

Cancer risk information in the database is available in several forms. Users can look up or search by the EPA cancer risk category assigned to a particular chemical active ingredient, such as "Carcinogenic to Humans" or "Possible Human Carcinogen." Detailed descriptions are provided by clicking on the Cancer Risk Categories link in the More Info box on the left side of the page **(4)**.

Additional cancer and other health risk information is included in EPA risk management documents that are available for some but not all of the active ingredients in the database. The Bibliography **(5)** provides a complete listing of the risk management documents currently available. These documents are also provided on the Results page for each active ingredient search where available. Risk management documents, known as Re-registration Eligibility Decisions, or RED documents, are documents provided by EPA as part of the pesticide re-registration process. For each chemical being re-registered for use in a pesticide product, the documents provide details on how the EPA evaluated the chemical and its associated human and environmental health risks and determined what levels and types of use would be acceptable.

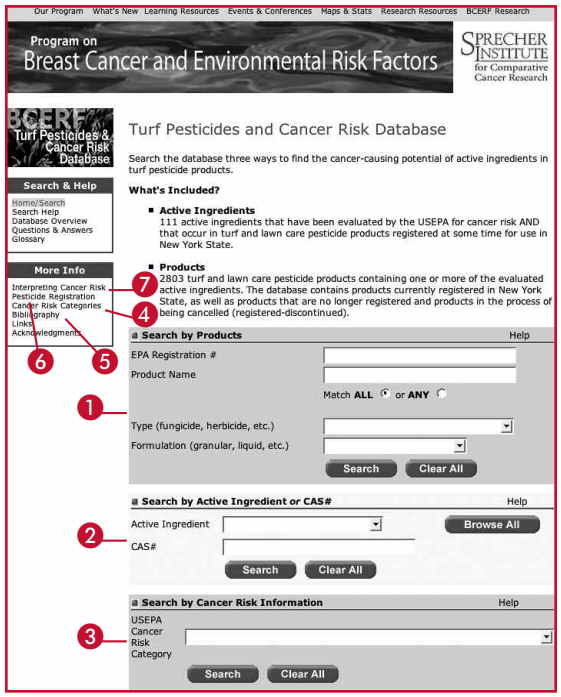

Figure A

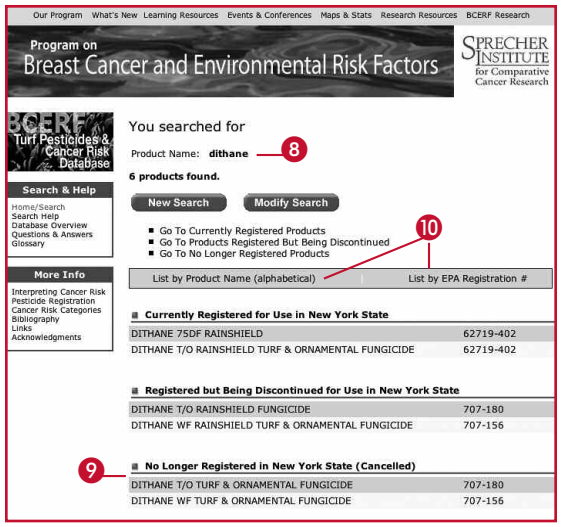

Figure B

Find pesticide products:

Since the full names of pesticide products are often long and complicated, a search using one or more keywords **(8)** enables quick and easy access to corresponding products. Products in the database are limited to those that have ever been registered for turf and lawn use in NYS, and then only those that include active ingredients evaluated for cancer risk by EPA. Cancelled products **(9)** are included because BCERF focus groups with turf pesticide applicators revealed that many applicators are interested in the risks of products that they may have used in the distant past but no longer use. Product results can be sorted by name alphabetically or by EPA registration number **(10)**.

Get product details:

Clicking on a product takes you to the Product Details page **(11)** where product-specific information can be found. Terms on this page and elsewhere in the database are hyper-

http://envirocancer.cornell.edu/turf/

linked to their definitions in the Glossary **(12)**, which is always a click away on every page in the Search & Help box on the left side of the page. Clicking on a product's active ingredient **(13)** takes you to the Active Ingredient page for that particular chemical.

Get active ingredient details: You can get to the Active Ingredient page from the Product Details page, the Browse All button or the Active Ingredient menu on the Home/Search page, or via the active ingredient list produced from a cancer risk category search. Once here, a variety of active-ingredient-specific information is available, including the cancer risk category **(14)** and the species of laboratory animal tested and tumor types found **(15)**. An important note on this page informs users that cancer risk classifications are specific to active ingredients, not products, and that a variety of risk information found in EPA risk management documents should be used to estimate the actual cancer risk associated with use of a particular pesticide product **(16)**. Links to Interpreting Cancer Risk, EPA risk management documents, and turf and lawn care products that include the active ingredient are included on this page.

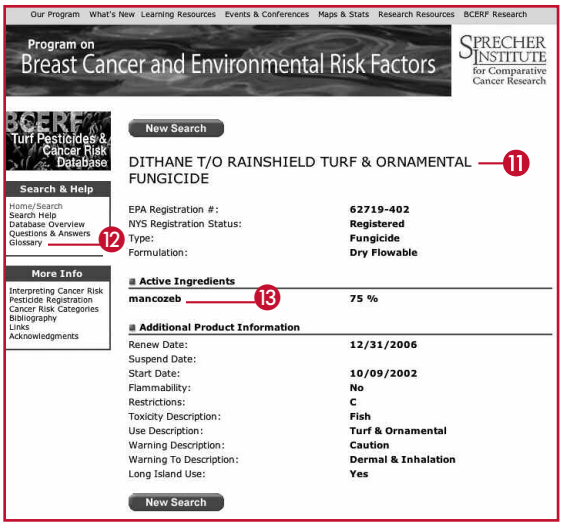

Figure C

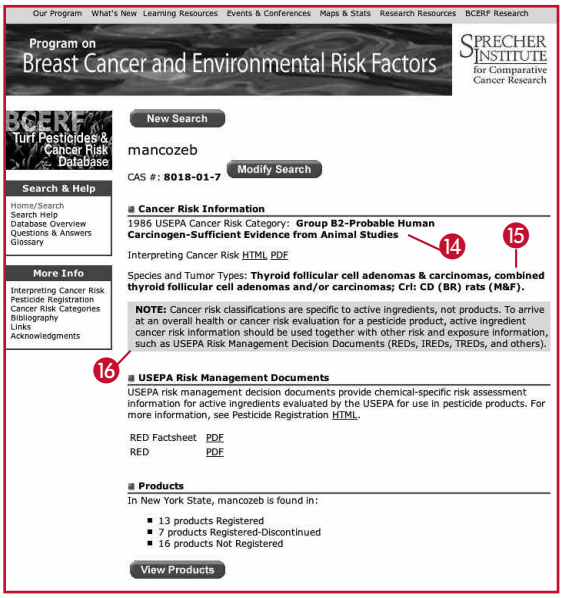

Figure D

At this time, the *Turf Pesticides and Cancer Risk Database* does not include all active ingredients and associated turf and lawn care products registered in New York State. Cancer risk has not been fully evaluated for many active ingredients. Cancer risk information is not available for all chemicals because federal pesticide registration laws have, until recently, only required full evaluations of cancer risk for chemicals that will be used in pesticides that also have food-crop uses. Federal legislation effective October 1, 2006, now requires that, over time, all chemicals proposed for pesticide registration or re-registration are evaluated for a variety of health risks, including cancer. The process of accumulating new cancer risk information on these chemicals will take many years. The *Turf Pesticides and Cancer Risk Database* will be updated as this information becomes available.

Acknowledgements

The Turf Pesticides and Cancer Risk Database was produced by Heather Clark, Research Associate; Ellen Hartman, staff writer; and Suzanne Snedeker, Associate Director of Translational Research, BCERF program, Sprecher Institute for Comparative Cancer Research, College of Veterinary Medicine, Cornell University. Web programming was done by Penny Ciccone, Mary Stauble, Mari Stewart, and Phyllis Highland, College of Veterinary Medicine Information Technology, and Sean Gardner, computer consultant. Additional valuable assistance was provided by undergraduate research assistants Devi Chandrasekaran, Chloe Ota, and Melissa Sherwin. Pesticide product information has been provided courtesy of the Cornell Pesticide Management Education Program (PMEP) and the Pesticide Sales and Use Reporting (PSUR) Project. Pesticide product information is also accessible via the New York State Product, Ingredient, and Manufacturer System (PIMS) database, developed and maintained by PMEP. We would like to acknowledge the special contributions of William Smith, Senior Extension Associate, PMEP; Robert Warfield, Senior Program Analyst, PSUR; and Fion Lee, Active Ingredient Project Manager, PSUR, for their many contributions to the content of this database. We would also like to anonymously acknowledge our volunteer usability testers, and others, whose input contributed greatly to improving the user interface of the database. Funding for the development of this database was provided by the New York State Departments of Health and Environmental Conservation, and the US Department of Agriculture Cooperative State Research, Education and Extension Service. Any opinions, findings, conclusions or recommendations are those of the authors and do not necessarily reflect the views of the New York State Departments of Health and Environmental Conservation or the US Department of Agriculture.

BCERF Activities to Promote Healthy Eating and Active Lifestyles

By Barbour Warren, Ph.D., BCERF Research Associate

BCERF activities to promote healthy eating and active lifestyles have four main components. These are 1) to critically evaluate relationships between diet and lifestyle factors and breast cancer risk, 2) to develop and test models for breast cancer risk reduction through interventions to increase opportunities for healthy eating and active living, 3) to communicate the results of our work to scientists, researchers and health professionals, and 4) to communicate with the public about breast cancer risk reduction.

Evaluating and Communicating the Research Literature

We conduct critical evaluations of the research literature on understanding the biology of breast cancer, on breast cancer risk, and on the association of diet, physical activity, and other health behaviors with breast cancer risk. These evaluations are communicated to scientists, researchers, and health professionals through detailed fact sheets. Each year we produce two or three fact sheets on different aspects of diet and lifestyle and how they are related to breast cancer risk. The fact sheets are the product of review and evaluation of all existing scientific literature related to the area of interest. Examples of recent fact sheets include the relationship to breast cancer risk of fruits and vegetables, herbal medicine, dietary carbohydrates and radiation exposure. We also produce quick summaries in the form of tip sheets on ways that consumers can use this information to reduce their risk. All of these educational materials can be found on the BCERF web site.

Small Steps are Easier Together: An Environmental Model for Prevention of Excess Weight Gain and Breast Cancer Risk Reduction

Obesity and overweight affect more than 60% of the U.S. adult population. Obesity is associated with a doubling of breast cancer risk, and has been attributed to 30% or more of all breast cancer cases. Excess body weight is also a breast cancer risk factor. Prevention of excess weight gain therefore has the potential to be an effective strategy for breast cancer risk reduction. We live in an environment where good tasting, high calorie food is plentiful and where little physical activity is necessary or encouraged. In fact, a number of recent changes in food and physical activity environments correlate well with recent increases in the prevalence of overweight and obesity among U.S. women. Examples of these changes include increases in portion sizes, soft drink consumption, the number of meals eaten out, and the amount of leisure time not involving physical activity. Most efforts to control body weight have been directed toward heavier persons and have used individual approaches including education, behavior modification and drugs. These individual approaches have met with limited success, and when successful, only reached a small proportion of the population. To prevent excess weight gain in the population we need to use strategies that affect the whole population.

In our study, we have taken a unique approach to breast cancer risk reduction. Our goal is to work with community members to make healthy eating and active living easier in community environments. Our program, called "Small Steps are Easier Together," uses a unique researcher and community collaboration, since local residents know best what will work in their communities. Working with community members, we carried out an assessment of healthy eating and active living opportunities in the community. We presented the results of this assessment to the community members and leaders. Community members identified program goals that were likely to be locally effective and succeed in increasing healthy eating and active living. The program goals were to increase walking steps by at least 2000 at least three times a week, and to increase the availability of healthy options at community events. We carried out this pilot study over three months in this rural community in the Catskill Mountains of New York State. In the study community, 315 women or about one third of local women joined one of 12 community walking teams. Led by their volunteer team leader, the members of the walking teams logged more than 70 million steps, the equivalent of about 30 thousand miles. About 20% of the participants met the goal of adding 2000 extra walking steps at least three times a week for a period of six weeks. In addition, community chef volunteers added healthy food options to 22 separate community events that reached 542 community residents. We are refining and applying this successful model in four more community settings in New York State. A tutorial for health professionals who wish to use our model in community environmental interventions is available on the BCERF web site.

These activities are made possible by funding from the U.S. Department of Agriculture, Cooperative State Research, Education and Extension Service and a grant from Paul and Merilyn Schreiber.

BCERF Bookmark Helps You "Bookmark" Our Site

As a way to help people remember our web address, and to visit often, BCERF developed an actual bookmark as a reminder to "bookmark" our site in their web browsers.

In an effort to get these bookmarks into the hands of those for whom they would be most useful, we implemented a mailing of packets of bookmarks to target organizations. We included: breast cancer organizations across NYS, as well as national cancer organizations that have an environmental or breast cancer focus in their outreach and educational efforts; all American Cancer Society offices in NYS, as well as select offices in the Northeast and California; Cornell Cooperative Extension offices; NYS Healthy Women Partnership offices; and targeted NYS legislators and members of Congress.

If your organization has not yet received these and you would like a packet of 50 bookmarks (please inquire if you would like more) for distribution, please get in touch! Contact Lyn Netter at (607) 254-2893 or breastcancer@cornell.edu

Frequently Asked Questions (FAQ) Featured on the BCERF Web Site

By Ellen Hartman, BCERF Staff Writer

When BCERF revamped our web site in 2005, we took a critical look at the existing information and updated or revised pieces that had become outdated. We felt that our Frequently Asked Questions (FAQ) section was in particular need of revision so we removed it from the site until we could edit it thoroughly.

Early in August we launched our improved FAQ. Our current list of questions and answers will expand as we finish editing more existing questions and add new ones.

Who Answers the Questions?

Knowing where web information comes from is key to determining if the information is credible. On the BCERF FAQ pages, the author for each answer is identified on the page. We include a link to the author's staff page or credentials whenever possible. In general, questions are answered by people with expertise in the subject area. (For example, Dr. Suzanne Snedeker from BCERF answers many of the questions dealing with pesticides.)

THE NEW FAQ IS AVAILABLE ON THE WEB AT:
http://envirocancer.cornell.edu/faq/qa.cfm

Where Do the Questions Come From?

Almost every question in the BCERF list comes from the public. Some come in through email. Others are drawn from Regional Cancer and Environment Forums. We've recently added a block of questions on biomonitoring asked by the audience at a long distance learning program.

We do edit questions and answers before they are added to the web site. The edits are mainly to make it easier to find and read questions online. Sometimes we may broaden a very specific question, making it and the answer more generally interesting.

Get Involved

We included an email link on the FAQ pages so you can send questions directly to us. Unfortunately we are not able to provide a personal answer to every question. We will collect questions and post answers to those that seem to us to be of general interest to our audience. Because BCERF provides science-based information, it may take some time to research the answers to some questions. We are planning to update the FAQ section at least four times a year—more often when we are able.

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Staff Changes

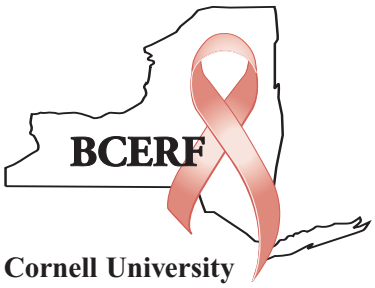
BCERF says farewell to Maggie Carey

As our environmental health educator, Maggie wore many hats for BCERF. As an educator, Maggie coordinated outreach efforts for our EnviroCancer Connections project. This included designing and mailing out binders of educational materials to over 400 occupational health nurses in Pennsylvania, Massachusetts, and New Jersey. Maggie organized two long distance workshops on biomonitoring topics, conducted in partnership with members of the NYS Breast Cancer Support & Education Network. Maggie also coordinated all evaluation efforts for BCERF, and worked with others on staff to set up a database where we could compile evaluation data of our workshops, forums, videoconferences, and print publications. Maggie worked tirelessly to make educators, survivors, cancer advocates and legislators more aware of BCERF and our many resources. She was part of the team that started to revamp our mailing database, and helped coordinate our efforts to develop materials like our bookmark and presentation folder, that are being used to showcase BCERF's educational resources.

Maggie's energy is contagious. She leaves the rest of us breathless in her wake, as she juggled event planning and the support of many of our programs. She will be very missed by all of us in BCERF. *(Suzanne Snedeker)*

BCERF welcomes Lyn Netter

BCERF welcomes its new Administrative Assistant, Lyn Netter, who joined us in October. Lyn comes to us from Cornell's School of Industrial and Labor Relations, where she worked as a program coordinator for six years. Lyn will be dividing her time between BCERF and other responsibilities for the Department of Clinical Sciences oncology faculty, here in the College of Veterinary Medicine. Welcome, Lyn!



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