In recognition of CHE's 10th anniversary, colleagues who have been particularly instrumental to shaping CHE this past decade will be invited to write an introduction. This month's introduction is by Ted Schettler, MD, MPH, who serves as CHE Science Director, Science Director of the Science and Environmental Health Network, and Coordinator of CHE's Science Working Group.

Beginning a decade ago, CHE formed working groups with interests in specific aspects of environmental health science. Most were organized around health outcomes, since individuals and organizations frequently focus on a specific disease or disorder, often for very personal reasons, and it seemed logical to build on that structure.

Periodically, however, we come up against the limits of our taxonomies. For example, naming the diabetes-obesity spectrum working group was challenging from the beginning—it was once known as the metabolic syndrome working group—because of the common co-occurrence of insulin resistance, type 2 diabetes, obesity, cardiovascular disease, and lipid abnormalities, not only in individuals but also in populations. Moreover, mid-life diabetes and obesity are themselves risk factors for cognitive decline, dementia, and certain kinds of cancer. But, since these conditions are so commonly mixed together, what is the disease? Does our routine use of the International Classification of Diseases coding system hinder our ability to see patterns and identify common environmental threads that create the conditions giving rise to the diseases of our time?
I have a strong sense that environmental health sciences are moving toward adopting a more integrated, multifactorial, multilevel framework that will eventually profoundly influence study design, data analysis, and ultimately public health interventions--even as scientists become more adept at probing subcellular secrets. For example, recent data show that diet and nutritional status can modify the response to environmental chemicals directly in target tissues or indirectly by altering chemical metabolism and absorption through changes in the intestinal microbiome. Nutrition in the US is strongly influenced by a complex industrialized food system, heavily reliant on fossil fuels, pesticides, and fertilizers, and characterized by large amounts of unhealthy processed food, junk food advertising beginning in early childhood, and inequities in access to nutritious food. Here we see relationships crossing multiple levels of a micro-macro spectrum.

Traffic-related air pollution increases the risk of developing asthma as well as the frequency of attacks in children who already have the disorder. The risk from a given level of exposure, however, is greater in children living in lower socioeconomic circumstances. Similarly, higher lifetime lead exposures result in greater cognitive decline in older people who live in poorer socioeconomic neighborhoods than in those who are better off. In other words, the totality of the chemical, physical, nutritional, and social environments--at multiple levels--create the system conditions out of which health or disease patterns emerge.

This suggests to me that we might learn important lessons from the ecological sciences--the study of nested, hierarchical systems, comprised of interacting and semi-independent parts, that aggregate into higher orders of complex integrated wholes. Seen this way, the boundaries separating CHE's working groups can be respected for practical purposes (e.g., limiting the number of email messages), but they should be held lightly and even ignored when they interfere with more integrated insights. Periodic scans of the larger landscape looking for patterns and trends may shed additional light and identify new opportunities.

I've been thinking a lot about this framework as it pertains to the origins of breast cancer--a complex set of diseases, with different patterns in different countries, influenced by numerous, multilevel risk factors. Recently, the California Breast Cancer Research Program funded development of a complexity model for post-menopausal breast cancer that was publicly released in the recent IOM report "Breast Cancer and the Environment: A Life Course Approach." This model incorporates physical/chemical, behavioral, societal/ cultural, and biologic dimensions. At first glance, these kinds of models can look like spaghetti, where everything is connected to everything else. But they accomplish several important things: they acknowledge and communicate complexity, help to make sense of it, and support the development of collaborative strategies to study and intervene. They can also be modified as new information becomes available. Thus, they move inevitably toward a more valid representation of reality.

There is, of course, the risk that an ecological, complexity framework could serve as an excuse for diverting deserved attention from one set of variables to another, simply by claiming one or another to be more important. We should push back against that. Complex systems are made up of relationships and interactions, feedback loops, tipping points, and acquire emergent properties not predictable from knowing about the parts. Complex diseases are...well...complex, and when we try to understand them by drilling down to finer detail within this nested, multilevel system, we need to be careful not to ignore or discard pieces and interactions along the way--many are likely to be very important.

Work on individual variables will always add value, but situating that work within a larger framework will make it possible to see how efforts in one area may be related to efforts in...
another, thereby creating opportunities for new kinds of collaboration with common purpose. I look forward to CHE's next ten years as partners continue to share their information and insights, collectively exploring and even building models that better express our understanding of environmental health sciences. With gratitude for all that this community has accomplished over the past ten years.

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This essay is available on CHE's blog for comment and further discussion.

CHE Partnership Calls

**CHE Partnership call: Nanoparticles: A Science and Policy Update**
Tuesday April 17, 2012 at 10:00 am Pacific / 1:00 pm Eastern

**RSVP for this call**

Nanoparticles are already in 100s of everyday products, including the food we eat, but toxicology and safety studies are still in the early stages of development. Basic research on cell cultures suggests that nanoparticles can affect normal cell functioning. One recent study indicated that the uptake and accumulation of nanoparticles in cells can disrupt important intracellular interactions. With the proverbial cat already out of the bag, what is the current understanding of the science and potential health risks? What policy opportunities are there to ensure public health is protected? The researchers on this call will present the latest on what has emerged in this field since CHE held a national Partner call on this topic almost two years ago.

Featured speakers include:

**Jaydee Hanson** works as a policy analyst for the Center for Food Safety on issues related to nanotechnology, animal cloning and animal genetic engineering. He also works for the Center's sister agency, the International Center for Technology Assessment (ICTA) where he directs their work on human genetics, synthetic biology and nanotechnology. He is the US co-chair for the Nanotechnology Taskforce of the Transatlantic Consumers Dialogue and a fellow of the Institute on Biotechnology and the Human Future.

**Jennifer Sass** is a senior scientist in NRDC's health and environment program, working on scientific issues relevant to federal chemical regulations. Jennifer directs the scientific integrity project and the nanotechnology project. Jennifer received her doctorate degree from the College of Medicine at the University of Saskatchewan, Canada, and a postdoctoral fellowship in toxicology from the University of Maryland.

**CHE Cafe call: Designing Healthy Communities: a conversation with Richard Jackson, MD, MPH**
Thursday April 26, 2012 at 10:00 am Pacific / 1:00 pm Eastern

**RSVP for this call**

In the provocative new 4-hour series, "Designing Healthy Communities" host/narrator Richard Jackson, MD, MPH, looks at the impact our built environment has on key public health indices--obesity, diabetes, heart disease, asthma, cancer and depression. Dr. Jackson shows the connection between poorly designed communities with burgeoning health costs,
then analyzes and illustrates what citizens are doing about this urgent crisis by looking upstream for innovative solutions. On Thursday April 26, 2012 at 10 am Pacific / 1 pm Eastern Elise Miller, MEd, CHE Director, will talk with Dr. Jackson about the built environment and keys to designing health-promoting communities.

The call will be moderated by Elise Miller, MEd, CHE Director. The call will last one hour and will be recorded for archival purposes.

**Special Events and Announcements**

**Registration now open**: The Healthy Environments Across Generations conference, which will take place at the New York Academy of Medicine on June 7-8, 2012, will address the environmental health aspects of how we live, eat, work, play, and socialize throughout life, and how we can transform our environments to promote health and prevent disease. Register now for this innovative event bringing together experts from many disciplines to help plan our collective future. Join us and over 40 sponsors to participate in "Thinking Forward" sessions, "Making Connections" roundtables with experts in many fields, and a range of creative special activities including a "wellness" tour of the Central Park Conservatory Gardens. New co-sponsors include the Alliance for Aging Research and the Cornell Institute for Translational Research on Aging.

This participatory conference will bring together leaders and innovators from multiple sectors to:

- Catalyze innovative approaches towards a systems-based approach to health across the lifespan;
- Identify key intervention points and crosscutting environmental solutions to help reverse rising disease trajectories;
- Develop intergenerational programmatic and policy recommendations/models that reflect an integrated approach to wellness; and
- Create an ongoing network for collaboration to build healthier communities for all.

Visit the [conference webpage](#) for more information and a link to the registration page.

**Submit creative expressions to "Unpaving Our Way to the Future"**: Submit your creative expressions for viewing at the "Healthy Environments Across Generations" conference. What would it take to create communities that are no longer paved with concrete and asphalt, but instead are designed to nurture our health and well-being and that of our communities for generations to come? We welcome creative artists of all ages and levels of experience to imagine how parking lots and other paved areas that cover so much of our landscapes, urban and rural, could be transformed into healthy, sustainable environments. Artistic submissions can include photography, poetry, essay, dance, music, painting, drama, puppet show, etc. Deadline for submissions is May 15th. Download the flyer for complete submission details from the [conference webpage](#).

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**Resources from recent CHE calls**:
If you missed any of the following CHE calls, you may listen to MP3 recordings and find supporting materials at the following links:

- March 12, 2012 - [Phthalates and Proposed REACH Regulations](#)
February 14, 2012 - Health Effects of Indoor Air Contaminants
January 19, 2012 - Gut Microbiota and Environmental Chemicals in Diabetes and Obesity (Note: We apologize that there is no MP3 recording available for this call due to technical difficulties. However, speakers slides and additional resources are available on the call page.)

You can subscribe via podcast to receive notifications of new call recordings added to the CHE archives. View past calls and subscribe to the podcast.

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**CHE Working and Regional Group Updates**

Stay in touch with CHE through social media:
Visit CHE's blog to read a recent post by Sharyle Patton, Lisette van Vliet and Genon Jenson on Andreas Kortenkamp’s recent report on endocrine disruptors.

Visit CHE's Facebook page.

Join CHE on LinkedIn
CHE has set up a LinkedIn profile and a group for CHE Partners to better connect with one another. Join us and start a conversation, find Partners for networking and collaborations and otherwise expand your CHE conversations.

CHE news feed and updates
CHE provides our members with an almost-daily updating of a newsfeed (http://www.healthandenvironment.org/news/announce) that includes not only news articles, but also journal articles, job openings, calls for comments, calls for proposals and other announcements. Partners can subscribe via RSS. Excerpts from this feed of interest to three of our working groups--children’s health, the Learning and Developmental Disabilities Initiative and CHE-Washington--are sent most business days, with subscribers having the option to receive a digest version once a week. The Fertility and Reproductive Health Working Group receives a similar update once a week. If you’d like to receive any of these updates in your email, let us know which group you would like to join.

**Cumulative Impacts Working Group hosted by CHE and SEHN**
~ coordinated by Elise Miller and Carolyn Raffensperger, for more information visit the Cumulative Impacts website

~ March working group call: New Energy Developments: Social and Environmental Impacts
Wednesday March 28, 2012 at 11:00 am Pacific / 2 pm Eastern

Dial-in information: 1-270-400-2000, Access code: 198686#

Dr. Simona Perry is an applied social and environmental scientist whose current research focuses on emerging social and environmental conflicts around new energy development projects in North America. For the past three years, Simona has been documenting the quality of life and environmental changes being experienced by local farmers and forest landowners in Bradford County, Pennsylvania. As of March 2009, 1,019 new Marcellus shale gas wells have been drilled and hydraulically fractured in the county, miles of pipeline and acres of new compressor stations have been installed across the landscape, and water withdrawal sites continue to be developed along the Susquehanna River and its tributaries.
All of the developments associated with the Marcellus shale gas industry amount to a rapid industrialization of the landscape in which farmers, forest landowners, families, and neighbors increasingly feel confusion, frustration, anger, depression, and high levels of stress over the future of their land, water, soil, and lives.

Simona's broad theoretical and practical focus is on understanding the everyday lives of individuals and communities in a rapidly changing world, sense of place phenomena in the face of globalized markets and identities, and creating locally informed and culturally relevant policy dialogues that empower local citizens to engage in regional, national, and global deliberations. She received her doctorate from the University of Massachusetts Amherst in human dimensions, and she holds a master's degree in marine and environmental policy from the University of Washington and a bachelor of science degree in wildlife biology from the University of Massachusetts Amherst.

The call will be moderated by Elise Miller, MEd, director of CHE. The call will last one hour and will be recorded for archival purposes.

~ The POWER Study (Project for an Ontario Women's Health Evidence-based Report) Social Determinants of Health and Populations at Risk chapter now available

Using a community-engaged research model and integrated knowledge translation approach, the POWER Study has examined a comprehensive set of evidence-based indicators bridging population health and health system performance. The Women's Health Equity Report is serving as an evidence-based tool for policy makers, providers and consumers in their efforts to improve health and reduce health inequities in Ontario. POWER has examined gender differences in access to care, as well as quality and outcomes of care for the leading causes of morbidity and mortality in the province and how they differ by gender, socioeconomic status, ethnicity, and geography.

Read more

CHE Diabetes-Obesity Spectrum
~ coordinated by Sarah Howard, for more information contact info@healthandenvironment.org

~ New articles and research published in academic and scientific journals:
This month saw publication of a number of articles on environmental chemicals and cardiovascular disease/hypertension, including:

Read more

Read more

In addition to some important new articles on chemical diabetogens:

Read more

Read more

Read more

And on obesogens:

Read more

Read more

Read more

CHE Fertility
~ coordinated by Karin Russ, karin@healthandenvironment.org

~ Educational offerings:
CHE Fertility Teleconference: Environmental Contributors to Preterm Birth
March 19th at 10:00 am Pacific / 1:00 pm Eastern

Preterm birth is an intractable public health problem, affecting more than 500,000 infants per year in the United States. A mounting body of research links environmental contaminants to preterm birth. This call features Dr. Rita Loch-Caruso from the University of Michigan, Dr. Howard Chang from Emory University, and Dr. Kaylon Bruner-Tran from Vanderbilt University. Join us for this important discussion on environmental contributors to preterm birth, and implications for practice and policy changes.
Read more and RSVP

NIEHS Webinar series addresses early-life exposures: A recent NIEHS Superfund Research Program (SRP) webinar explored the potentially adverse effects of exposure to brominated fire retardants (BFRs) during critical windows of susceptibility. This webinar is the first in a continuing series on the long-term health consequences of early-life environmental
New studies:

**Transgenerational Actions of Environmental Compounds on Reproductive Disease and Identification of Epigenetic Biomarkers of Ancestral Exposures**: Environmental factors during fetal development can induce a permanent epigenetic change in the germ line (sperm) that then transmits epigenetic transgenerational inheritance of adult-onset disease in the absence of any subsequent exposure. The epigenetic transgenerational actions of various environmental compounds and relevant mixtures were investigated with the use of a pesticide mixture (permethrin and insect repellant DEET), a plastic mixture (bisphenol A and phthalates), dioxin (TCDD) and a hydrocarbon mixture (jet fuel, JP8). PLoS One.

Endocrine disruptors and asthma-associated chemicals in consumer products: A first-of-its-kind, peer-reviewed study confirms that chemicals linked to health problems are common in consumer products like cosmetics, sunscreens, cleaners and vinyl products. Many of the 55 compounds found were not listed on the labels of the 213 products tested. Even products marketed as 'Green' or 'Natural' contained chemicals of concern. Environmental Health Perspectives.

Environmental exposures: how to counsel preconception and prenatal patients in the clinical setting: A growing body of scientific evidence suggests that preconception and prenatal exposures can adversely impact fetal development leading to potential long lasting health effects. Reproductive health professionals have little training on these exposures and how to effectively counsel patients. We present short summaries of some of the most common environmental exposures and give providers practical tools to counsel patients in the clinical setting. AJOG.

Industrial chemicals linked to attention problems in Massachusetts children: PCBs, which were first linked to learning problems in children more than two decades ago, may play a role in attention-deficit hyperactivity disorder, too. Boys who were exposed to higher levels of PCBs in the womb scored lower on focus and concentration tests. Children studied were born to mothers living near the contaminated harbor and dumpsites, but their exposures were comparable to children's levels throughout the United States. Environmental Health News.

Vitamin D shrinks fibroid tumors in rats: Treatment with vitamin D reduced the size of uterine fibroids in laboratory rats predisposed to developing the benign tumors, reported researchers funded by the National Institutes of Health. ScienceDaily.

~ Announcement: FOA: Maternal Nutrition and Pre-pregnancy Obesity: Effects on Mothers, Infants and Children (R01): Sponsor: National Institute of Nursing Research. This Funding Opportunity Announcement (FOA) issued by the National Institute of Nursing Research encourages R01 applications to improve health outcomes for women, infants and children, by stimulating interdisciplinary research focused on maternal nutrition and pre-pregnancy obesity. Maternal health significantly impacts not only the mother but also the intrauterine environment, and subsequently fetal development and the health of the
CHE Healthy Aging and the Environment Initiative
~ coordinated by Maria Valenti, mvalenti@igc.org

~ The American Society on Aging Annual Conference "Aging in America" upcoming in Washington, DC, March 28-April 1: The ASA Conference brings together thousands of professionals to provide a forum for research, programs, policy discussions and advocacy initiatives.
Read more

~ CDC's Healthy Aging Research Network & Creating Aging-Friendly Communities community of practice offers resources and networking for those interested in healthy aging: It includes interactive, online tools to learn and build capacity for change, and a series of four online modules, including one that features a segment on Healthy Aging and the Environment by Ted Schettler MD, MPH. Each module includes online recorded presentations, interactive discussion areas, resources and tools that cover key concepts for the module topic. Register for the community here.
Read more

~ The US Environmental Protection Agency invites the public to submit creative projects: The 6th annual Rachel Carson intergenerational "Sense of Wonder" contest invites submissions of creative projects in four categories: photography, essay, poetry and dance. This year, in honor of the 40th anniversary of the Clean Water Act, the contest will focus on a "Sense of Water." Contest submissions are encouraged to focus on the various properties of water--how it tastes, what it sounds like, how it feels--and what water means to the entrants. Deadline is June 1.

~ Upcoming Presentations
May 18, 2012: Healthy Aging and the Environment Conference: Public Policy and Aging Program at the University of Alabama at Birmingham, AL. Co-sponsored by AARP. Invited presentation by Ted Schettler MD, MPH.

October 27-31, 2012: American Public Health Association's Annual Meeting, October 27-31 in San Francisco: CHE members and colleagues will be presenting a symposium on Healthy Environments Across Generations at the 2012 APHA meeting. The theme of this year's APHA meeting is Prevention and Wellness Across the Lifespan, a subject near and dear to our hearts and work.

CHE Regional Working Groups Updates

CHE Alaska
~ coordinated by Pam Miller, pkmiller@akaction.net

~ Working group call: Toxic Chemicals in Everyday Products: Health Effects of Flame Retardants (PBDEs) and State Policies to Prevent Exposures
Wednesday March 21, 2012 at 9:00 am Alaska / 10:00 am Pacific / 1:00 pm Eastern

RSVP: To join this free call and receive the dial-up instructions, please RSVP to Alaska Community Action on Toxics at diana@akaction.org or (907) 222-7714.
This call will be a discussion with researcher Ami Zota, ScD, and nationally-recognized environmental health leader Kathy Curtis on the adverse health effects of exposure to PBDEs and what we can do to prevent exposures. More than twelve states have already banned these toxic flame retardant chemicals. Find out what's happening in Alaska and how you can support Alaska House Bill 63 which follows the lead of other states and would ban the importation of consumer products containing PBDEs. PBDEs (polybrominated diphenyl ethers) are toxic flame retardant chemicals found in some electronics, furniture foams, fabrics, and kitchen appliances. They are not permanently bound to products and are released into our homes, workplaces and the outdoor environment. PBDEs are persistent, bioaccumulative environmental contaminants and are largely unregulated in the United States. People are exposed in multiple ways, including contaminated air, household dust, and foods. PBDEs interfere with thyroid function, cause problems with brain development, and disrupt learning, memory and behavior. Babies are exposed in their mother's womb and through breast milk.

~ Working group call: Upholding Our Human Right to Live in a Healthy Environment
Monday March 26, 2012 at 9:00 am Alaska / 10:00 am Pacific / 1:00 pm Eastern

RSVP: To join this free call and receive the dial-up instructions, please RSVP to Alaska Community Action on Toxics at diana@akaction.org or (907) 222-7714.

From the Gulf of Mexico to the Gulf of Alaska, communities are connected by global impacts from environmental contaminants. Join nationally-recognized environmental justice leader Monique Harden for a discussion of the legal counsel and advocacy support that won groundbreaking environmental justice victories to remedy governmental systems that subject communities to severely toxic environments. Monique is an attorney who specializes in environmental justice concerns in New Orleans, the city where she was raised. She organizes communities who live on the fenceline with polluting industries, using both litigation and advocacy to fight for both economic and environmental justice. Among the victories she can claim is a precedent-setting decision by the Environmental Protection Agency to deny a Clean Air Act permit to a company proposing a new facility in a neighborhood that was 80 percent African American and already surrounded by 12 industrial facilities responsible for 17 million pounds of air pollutants.

CHE Washington
~ coordinated by Steve Gilbert, sqgilbert@innd.org and Aimee Boulanger, aboulanger@whidbey.com

~ 2nd edition of "A Small Dose of Toxicology" now available: "A Small Dose of Toxicology", 2nd edition has been launched as a free e-book for downloading for an iPad, kindle or as an PDF. Published by Healthy World Press, all the chapters have been updated and several new chapters added with links into Toxipedia.
Announcements and News Highlights

Cancer and chemicals: Michigan NPR series launches
Michigan NPR is hosting a week-long series on cancer and the environment, which includes commentary on the President's Cancer Panel and interviews with leading CHE Partners.
[Read more]

Obama Administration announces commitments to protect the health of every American
Today, federal agencies, led by the Council on Environmental Quality (CEQ) and the U.S. Environmental Protection Agency (EPA), released environmental justice strategies, implementation plans and progress reports, outlining steps agencies will take to protect communities facing greater health and environmental risks.
[Read more]

Call for comments on TSCA paperwork and regulatory burdens
The Environmental Protection Agency (EPA) is seeking public comments on administration of the Toxic Substances Control Act (TSCA) Chemical Inventory which requires manufacturers, processors and importers to provide production volume, plant site information and site-limited status information. Comments are due by March 26, 2012.
[Read more]

Campbell's to end use of BPA in can linings
Campbell's Soup has agreed to stop using the chemical BPA in the lining of its cans, joining a host of other brands moving away from using the substance. Milwaukee Journal Sentinel, Wisconsin.
[Read more]

Environmental Health News: email, Facebook, Twitter and a website archive
EHN and its sister site, The Daily Climate, offer a wealth of valuable information each day at no cost to subscribers. The daily email subscriptions and the 350,000-item news archive have recently been supplemented by a Facebook page and Twitter feed.
[Visit the website]
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March 2012 issue of Environmental Health Perspectives available online
[Read more]

March 2012 issue of Environmental Factor available online
[Read more]

CHE maintains a news feed of environmental health related news announcements and events collected from a multitude of sources on CHE's website.
New Study: Endocrine disruptors and asthma triggers are common in consumer products
A new study out today in *Environmental Health Perspectives* confirms what many have suspected: chemicals linked to health problems are common in consumer products like cosmetics, sunscreens, cleaners and vinyl products. Many of the 55 compounds found were not listed on the labels of the 213 products tested. Even products marketed as 'Green' or 'Natural' contained chemicals of concern.

Read more

CHE lists hundreds of reports, books, videos, databases and other resources in a searchable Portal to Science on CHE's website.

Thank you for taking the time to read the latest about CHE. As always, we welcome your questions and suggestions. Please direct comments to Elise Miller, Director of CHE, at elise@healthandenvironment.org.

Best wishes,
Elise Miller, MEd, Director
Steve Heilig, Director of Public Health and Education at San Francisco Medical Society and CHE
Erika Sanders, Administrative Coordinator

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