



Collaborative on Health and the Environment

eNewsletter - October 2011

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Quantum Physics: A Touchstone for Environmental Health?

Before Einstein, Bohr and other scientific luminaries started grappling with questions of quantum physics, traditional Western scientific research was based on a number of assumptions. These included the belief that all particles are fundamentally distinct and that the observer has no influence on the outcome of an experiment. With quantum physics, however, two major new scientific developments came to light that upended these previous assumptions; namely, "entanglement" and "emergence." Though I am in no way qualified to offer an in-depth explanation of these concepts, I think they (even in general terms) can be used to elucidate how we understand environmental health--and ideally, lead to more cogent ways to address complex issues.

"Entanglement" is a term physicists use to describe the phenomena of two parts coming together to form a "whole" with attributes that are not a sum of discrete parts, but an entity that is distinct unto itself. In other words, the parts are "entangled" and the whole is as privileged as the parts are when not connected. The concept of "emergence" amplifies this way of understanding by suggesting that properties emerge when two parts come together that are not expressed when they are separate entities. An example often used is that when hydrogen and oxygen connect to form water--the "wetness" that emerges cannot be found in either the hydrogen or the oxygen, but only when those parts come together in the proportions necessary to create water.*

What do these have to do with environmental health? Scientific research continues to be biased towards a reductionist approach. We have barely begun to consider how new discoveries in physics applies to other sciences, much less our everyday lives. In the environmental health field, for example, we have primarily studied how a single chemical can trigger a cascade of biological events which may ultimately express itself as a certain disease or disability. We are a long ways, however, from understanding how chemicals interact with nutrition, the built environment, socioeconomic status, electromagnetic fields and other multi-faceted factors to influence health. While we have been looking at different parts and trying to clarify their specific properties, we have missed what is

equally important; namely, that the intrinsic relationships of whole systems cannot be identified by simply refining our understanding of one piece or another. In short, we have been giving higher value to separate parts, thereby neglecting the significance of the unique attributes of complex systems.

We now are at a juncture in our human and scientific history when we can no longer think along the lines of: "If we just fix each of these parts, our health--our society--will be better as a whole." We've tried that, and by doing so, we have indeed gained important insights. But that's only part of the story. We also have to give our dedicated attention to studying whole systems in order to understand some essential properties of life. This means valuing integrative and qualitative methodologies as much as quantitative research--and this means valuing relationships as much as independent entities.

Perhaps the difference in emphasis is best represented by René Descartes' famous statement, "I think, therefore I am"; and Desmond Tutu's, "I exist because of you." Both views are right--just as in quantum physics, a photon can be observed as both a particle and a wave. But in Western thinking to date, we haven't done a particularly good job elevating and integrating the insights of newer disciplines, such as quantum physics, ecology, systems biology, sociology and others--those that underscore a more expansive, holistic and relational understanding. In this context, instead of remaining solely enchanted by a reductionist framework that implies "it's all relative," we need to fully grasp that "it's all relational" as well. By doing so, we can no longer believe that actions can be taken independently. Instead, because of the complexity of the interactive, relationship--based system in which we live, we have the moral imperative to act with the knowledge that anything we do has consequences not just for ourselves, but for all of life.

Next week, the core leadership of CHE will hold its first in person retreat in years. I am too much a pragmatist to even suggest that we might map out a course of action that incorporates the concepts of "entanglement" and "emergence," which will, in turn, move whole systems towards improved public and planetary health. What I do hope we can do, however, is take the next stab at articulating an ecological model of health, based on the emergent properties of our life systems. In this process, our intention is to define some strategies, within CHE's mission and means, that can catalyze more integrative action. I look forward to sharing the results (and, hopefully, insights) of our discussions, so that we can collaborate even more effectively with all of you in the future.

With warm regards,

Elise Miller, MEd
Director, Collaborative on Health and the Environment (CHE)

*The following books notably informed my ideas for this essay:
Knocking on Heaven's Door: How Physics and Science Illuminate the Universe and the Modern World by Lisa Randall, PhD
The Heart of Higher Education by Parker Palmer and Arthur Zajonc, PhD
The New Physics and Cosmology by Arthur Zajonc, PhD

This essay is available on [CHE's blog](#) for comment and further discussion.

CHE Partnership Calls

CHE Partnership call:

CHE is currently planning a late October CHE Partnership call addressing BPA. This call will take place on October 27, 2011. More details will be distributed to the Partnership soon.

Special Events and Announcements

CHE-LDDI and ASA co-sponsor state-based workshops on environmental influences on neurodevelopment: CHE-LDDI and the Autism Society of America (ASA) are co-sponsoring 3 state-based workshops in North Carolina, Texas and California. The first workshop, in North Carolina, will take place on November 2nd. The workshop is titled: *Environmental Influences on Neurodevelopment: Translating the Emerging Science into Public Health Policy*.

During these workshops, national experts from diverse sectors will highlight the latest research on associations between environmental exposures and early neurodevelopment as well as the implications for prevention-based public health policy. This meeting is intended to catalyze cross-discipline discussions among leaders in environmental, experimental and epidemiologic fields as well as those involved in public policy and environmental health advocacy.

Workshop dates and locations:

- November 2, 2011 - Research Triangle Park, North Carolina
- November 15, 2011 - Dell Children's Medical Center, Austin, Texas
- January 12, 2011 - UCLA, California

Workshops are open to the public. Faculty, students, policy makers, and others concerned with environmental influences on neurodevelopment and public health are particularly encouraged to attend.

[Read more](#)

Save the Date! *Promoting Intergenerational and Environmental Health Across the Lifespan* conference announced for 2012: CHE and the Healthy Aging and the Environment Initiative are partnering with AARP, the US EPA Aging Initiative, The Intergenerational School, The Whole Child Center, The Center for Children's Environmental Health Center at Mt. Sinai Medical Center, Gray is Green, and WEACTION for Environmental Justice to organize a conference, entitled *Promoting Intergenerational and Environmental Health Across the Lifespan*, to be held in New York City in June 7-8, 2012. More detailed information can be found at the link below. Registration is not yet open, but information on registration will be posted as soon as it is available.

[Read more about the conference](#)

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:

- September 27, 2011 - [Air Pollution and Neurodevelopment: How Prenatal Exposures May Impact I.Q.](#)
- July 21, 2011 - [Breast Health and Early Life Exposures](#)
- July 12, 2011 - [The World Gets Hot\(ter\) with Mark Hertsgaard](#)
- June 30, 2011 - [Navigating the Science: Evaluating Research Quality](#)

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.](#)

CHE Working and Regional Group Updates

Stay in touch with CHE via Facebook and the CHE blog:

Visit CHE's blog at <http://ourhealthandenvironment.wordpress.com/>

CHE's [Facebook page](#)

Cumulative Impacts Working Group hosted by CHE and SEHN

~ coordinated by Elise Miller and Carolyn Raffensperger, for more information visit the [Cumulative Impacts website](#)

~ **MP3 recordings available for recent working group calls:** The Cumulative Impacts Working Group recently hosted to calls, which are now available as downloadable MP3 recordings on the CHE website.

Emerging Trends in the Field of Cumulative Impacts, September 20, 2011

[Listen to the MP3 recording](#)

No Borders: Communities Living and Working with ASARCO, a discussion with Lin Nelson and Anne Fischel, October 3, 2011

[Listen to the MP3 recording](#)

CHE Diabetes-Obesity Spectrum

~ coordinated by Sarah Howard, for more information contact info@healthandenvironment.org

~ **Colby College hosting conference:** "Chemicals, Obesity, and Diabetes" in Waterville, Maine, on Oct. 14. CHE will be attending.

[Read more](#)

~ ***The Annals of Internal Medicine publishes new summary:*** This summary is for patients and is titled, "Does the plastic chemical bisphenol a contribute to type 2 diabetes?"

[Read the summary](#)

~ **New Zotero group:** We have created a new group called "diabetes and environment" on www.zotero.org. Anyone can join the group, which is free and only requires installing the software on your computer. Here you can access a searchable database of thousands of studies on diabetes (of any type), obesity, chemicals, and other environmental factors. Members can add new studies to the database, or add them as citations to Word documents and other publications. Zotero is a useful tool for sharing research studies online.

~ **New research published in academic and scientific journals:**

Shankar A, Teppala S. 2011. Relationship between Urinary Bisphenol A Levels and Diabetes Mellitus. *J.Clin.Endocrinol.Metab* PM:21956417.

Ning G, Bi Y, Wang T, et al. 2011. Relationship of Urinary Bisphenol A Concentration to Risk for Prevalent Type 2 Diabetes in Chinese Adults: A Cross-sectional Analysis. *Ann.Intern.Med.* 155(6):368-374. PM: 21930854.

Huang CF, Chen YW, Yang CY, et al. 2011. Arsenic and diabetes: Current perspectives. *Kaohsiung.J.Med.Sci.* 27(9):402-410. PM:21914528.

Ibrahim MM, Fjaere E, Lock EJ, et al. 2011. Chronic consumption of farmed salmon containing persistent organic pollutants causes insulin resistance and obesity in mice. *PLoS.One.* 6(9):e25170. PM:21966444.

Ronn M, Lind L, Bavel BV, et al. 2011. Circulating levels of persistent organic pollutants associate in divergent ways to fat mass measured by DXA in humans. *Chemosphere* PM:21767864.

Feskens EJ. 2011. The prevention of type 2 diabetes: should we recommend vegetable oils instead of fatty fish? *Am.J.Clin.Nutr.* 94(2):369-370. PM (pubmed ID):21733879,

[Read other articles in this issue](#)

CHE Fertility

~ coordinated by Karin Russ, karin@healthandenvironment.org

~ New CHE Fertility call announced: Integrating Environmental Health Into Clinical Practice

November 18, 2011 at 10:00 am Pacific / 1:00 pm Eastern

[RSVP for this call](#)

Prenatal exposures to environmental chemicals have been associated with a wide range of diseases, both in the neonatal period and later in life. Animal and epidemiological studies are discovering links between endocrine disrupting chemicals and infertility. While research is uncovering the connections between exposures to environmental contaminants and reproductive health problems, health care providers are beginning to incorporate this information into clinical care.

Join us for an informative discussion about strategies for incorporating environmental health information into clinical care. Katie Huffling, CNM will review the need for screening patients for environmental exposures, and present a prenatal environmental screening tool she created for her clients. Sandy Worthington, WHNP-BC, CNM, will discuss the Green Choices Project she developed at the Planned Parenthood Federation of America. Dr. Kirtly Parker Jones will present information on counseling patients about environmental threats to fertility.

~ **Study: In utero exposure to DES associated with a high lifetime risk of a broad spectrum of adverse health outcomes:** Researchers combined data from three studies initiated in the 1970s with continued long-term follow-up of 4,653 women exposed in utero to DES and 1,927 unexposed controls. They assessed the risks of 12 adverse outcomes linked to DES exposure, and their relationships to the baseline presence or absence of vaginal epithelial changes, which are correlated with a higher dose of, and earlier exposure to, DES in utero. Findings include increased risk of infertility, miscarriage, preterm delivery, still birth, ectopic pregnancy, early menopause, and breast cancer in women exposed to DES in utero. *NEJM*.

[Read more](#)

~ **DES Action group comments on NEJM article:** Women exposed before birth to the anti-miscarriage drug diethylstilbestrol (DES), which was prescribed to their mothers primarily from 1938 thru 1971, know all too well of the health problems it inflicted on them as individuals. But an article in the October 6, 2011, New England Journal of Medicine, "Adverse Health Outcomes in Women Exposed in Utero to Diethylstilbestrol", provides a comprehensive look at what is known to date of medical problems for DES Daughters as a whole.

[Read more](#)

~ Environmental Endocrine Disruptors Gordon Research Conference:

June 03, 2012 - June 08, 2012

West Dover, VT

Sponsor: Gordon Research Conferences

A preliminary program for the Gordon Research Conference has been announced. Topics include: Endocrine Disruptors, Society, and Public Policy; Women's Health and Environmental Endocrine Disruptors; Men's Health and Environmental Endocrine Disruptors; Gene-Environment Interactions, Epigenetics, and EEDs; Thyroid and Immune System Disruptors; Neuroendocrine Disruptors; Resolving Controversies in Endocrine Disruption; Evolution in a Contaminated Environment; Endocrine Disruptors and Ecosystems: In Honor of Rachel Carson. Applications are available on the conference website.

[Visit the website](#)

~ **New article in *Environmental Health Perspectives*: Advising parents in the face**

of scientific uncertainty: How can clinicians advise pregnant women and others on environmental exposures in an accurate, responsible manner? Communicating about potential hazards requires delicacy and clarity, with full acknowledgment of the limits of current scientific understanding. Researchers at the UCSF Program on Reproductive Health and the Environment discuss the dilemma. *Environmental Health Perspectives*. Karin Russ, CHE Fertility coordinator, addressed this article in a recent blog post on CHE's blog.

[Read the article](#)

[Visit CHE's blog to read Karin Russ' post](#)

~ **ACOG Letter to EPA on Chlorpyrifos:** In a letter dated October 3, 2011, the president of the American Congress of Obstetricians and Gynecologists, James N. Martin, Jr., MD, FACOG, responded to the Environmental Protection Agency's invitation for comments regarding its upcoming decision to re-register the pesticide chlorpyrifos, an organophosphate (OP) insecticide, acaricide, and miticide used to control a variety of insects. The ACOG letter supports action taken by the EPA in 2000 to largely eliminate use of chlorpyrifos in home and school settings. Dr. Martin cites the 2007 Summit on Environmental Challenges to Reproductive Health and Fertility, co-sponsored by the UCSF Program on Reproductive Health and the Environment and the Collaborative on Health and the Environment, and the June 30, 2011 EPA Preliminary Human Health Risk memo on chlorpyrifos, describing evidence of negative neurobehavioral and neurodevelopmental outcomes in offspring exposed prenatally to chlorpyrifos.

CHE Learning and Developmental Disabilities Initiative

~ coordinated by Elise Miller, for more information contact

info@healthandenvironment.org

~ **State-based workshops announced:** CHE-LDDI and the Autism Society of America (ASA) are co-sponsoring 3 state-based workshops in North Carolina, Texas and California. The workshop is titled: *Environmental Influences on Neurodevelopment: Translating the Emerging Science into Public Health Policy*.

During these workshops, national experts from diverse sectors will highlight the latest research on associations between environmental exposures and neurodevelopment as well as the implications for prevention-based public health policy. This meeting is intended to catalyze cross-discipline discussions among leaders in environmental, experimental and epidemiologic fields as well as those involved in public policy and environmental health advocacy.

Workshops are open to the public. Faculty, students, policy makers, and others concerned with environmental influences on neurodevelopment and public health are particularly encouraged to attend.

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- January 12, 2011 - UCLA, California

[More information, including registration information](#)

CHE Regional Working Groups Updates

CHE Alaska

~ coordinated by Pam Miller, pkmiller@akaction.net

New call: Chemical Contaminants in Traditional Foods from St. Lawrence Island: Findings from a New Study and Update on International Actions to Eliminate

Persistent Pollutants

October 26, 2011 at 9:00 am Alaska Time/ 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.

The circumpolar Arctic is exposed to pesticides and industrial chemicals that originate from thousands of miles away, traveling northward via oceanic and atmospheric currents. These chemicals accumulate in the north because the cold climate and fat-based food web favor retention of these persistent toxic chemicals. The concentrations of persistent organic pollutants (POPs) increase at higher levels of the food web and humans are at the top of the Arctic marine food web. Therefore, Alaska Native peoples and others living in the circumpolar north bear a disproportionate burden of environmental contaminants. At the request of and in collaboration with the Yupik Eskimo people of St. Lawrence Island, Alaska Community Action on Toxics conducted a study to determine contaminant levels in traditional subsistence foods. Analyses of more than 300 samples indicated high levels of PCBs in important foods including bowhead whale, walrus, and seal.

Join this call to:

- Learn about the findings of the St. Lawrence Island traditional foods study recently published in the Journal of Toxicology and Environmental Health;
- Find out what actions the communities are taking to protect their health;
- Hear an update on chemicals being considered for a worldwide ban under the Stockholm Convention on Persistent Organic Pollutants (POPs).

For a complete list of speakers [visit the call page](#) on CHE's website.

CHE-HEAL

~ coordinated by Lisette van Vliet, lissette@env-health.org

~ **Shale gas fracturing:** Health and environmental implications Prompted by a call from Sandra Steingraber in a speech to the European Parliament last year, the Health and Environment Alliance (HEAL) is leading European efforts to raise awareness about the potential harm to health from hydraulic fracturing of shale gas, including the need for a precautionary approach. At a HEAL seminar in Brussels on 7 October, Lisette van Vliet gave a presentation on health and fracking. Participants also heard from a European Commission expert and about the experience in France where licenses for fracking are being revoked. HEAL and its members are calling better health and environmental impact assessment and greater public consultation on fracking. For a copy of Lisette's presentation or to join HEAL shale gas listserv, contact lissette@env-health.org. [View the press release about the seminar](#)

~ **Documentary "Notre Poison quotidien" screened in English:** The first-ever English language version of the hard-hitting film "Our Daily Poison" by leading investigative journalist Marie-Monique Robin took place at the Health and Environment Alliance (HEAL) on 6 October. The film will be shown in San Francisco on 18 October 2011.

Some of the issues raised in the film are very topical in Europe, which prompted a lively discussion with the film maker after the screening. One key issue discussed is the need to widen the peer reviewed science for risk assessment beyond Good Laboratory Practice (GLP) studies, which mainly represent industry research. French agency ANSES has recently used studies other than those following GLP in a review of the safety of BPA. The findings have led to an immediate response from French government to ban BPA in all food packaging by 1 January 2014. The bill is supported by French ministers of health and will be voted in the National Assembly on 12 October. The film also highlights the need for a new paradigm in the assessment of chemical risks that takes into account both low-dose and cocktail effects.

[View invitation to HEAL screening with links to further information about the film](#)

~ **EU Health Commissioner talks "environment" at UN non-communicable disease summit:** The Health and Environment Alliance (HEAL) welcomed European Health Commissioner John Dalli's support for including "underlying economic, social and environmental factors" at the UN summit on chronic, non-communicable diseases in September 2011. However, the real test will be whether or not the EU takes this on board when it develops future action plans and legislative reforms, and how widely it consults within and outside the health sector. Genon Jensen, HEAL described the basis for HEAL's position in an article published in a special issue of the European Parliament magazine, which was distributed at the EU Health Forum, a major stakeholder conference which takes place in Gastein, Austria each year. HEAL's next step is to take this issue to the WHO European Environment and Health Task Force meeting end October 2011.

[Read HEAL's open letter to Commissioner Dalli, press release, fact sheet and article from European Parliament magazine](#)

CHE Washington

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

~ **CHE-WA's Children's Environmental Working Group announces October meeting**

October 13, 2011 from 9:30 to 11:30 am Pacific

130 Nickerson St. Suite 105, Seattle, WA 98109

OR attend by phone by calling 877-351-4402 and entering conference code 9375693

This meeting will include presentations by Annie Merritt, Communication and Evaluation Coordinator for the Washington Tracking Network discussing the Washington Tracking Network, and Lauren Jenks will present a brief update on new WA Department of Health Healthy Homes activities. The meeting is free and open to all. Please RSVP to Julia Singer at 206-263-3042 or Julia.singer@kingcounty.gov.

~ **Upcoming training:** The next Eco-Healthy Childcare training in King County, WA will be the morning of Saturday, October 22 in Kent.

[More details](#)

~ **Children's Environmental Health Forum announced:** Save the date for a Children's Environmental Health Forum in downtown Seattle on Tuesday, November 29, 2011, 8:30am to noon. Organized by the Children's Environmental Health Working Group of the Collaborative on Health and the Environment - Washington. Hear from regional leaders and learn about the exciting work happening in Washington to protect children from harmful environmental exposures. More information coming soon.

~ **Lessons Learned:** Steve Gilbert publishes a monthly column in the CHE-WA bulletin titled *Lessons Learned: Look back to go forward*. In these columns Gilbert explores lessons and important events in environmental science from history and how those events have shaped or continue to influence our future. You can read past columns at: <http://toxipedia.org/x/06Jb>.

Announcements and News Highlights

Passport Foundation welcomes request for proposals:

The Passport Foundation's Science Innovation Fund is now accepting requests for proposals. The proposal submission deadline is October 20, 2011. The Fund, described in greater detail in the RFP, was established in 2009 by Passport to increase understanding of the impacts of hazardous chemicals on human health. Project results must have strong potential to inform and build support for significant changes in public policies or clinical practices.

For more information or to request a RFP contact info@passportfoundation.org

October 2011 issue of *Environmental Health Perspectives* available online

[Read more](#)

October 2011 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.

Reports, Resources and Other Update

NIH Launches Research Program to Explore Health Effects from Climate Change

[Visit the website](#)

New website: SourceWaterCollaborative.org

This is a web forum about where America's safe drinking water begins - the lakes, streams, rivers and aquifers we tap for public water systems. We are a web portal of the Source Water Collaborative, 23 national organizations united to protect America's sources of drinking water.

[Visit the website](#)

CHE lists hundred 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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