Collaborative on Health and the Environment
eNewsletter - July 2012

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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 Karin Russ, MS, RN, who serves as the national coordinator for CHE's Fertility and Reproductive Health Working Group.

Years ago, I was a nurse caring for a patient who had just had her sixth miscarriage. She was, as one might expect, emotionally devastated and searching for answers as to why this might have happened. At the time, some potential physiological causes were examined, but environmental factors were not considered.

As CHE celebrates its 10th anniversary, significant progress has been made toward educating professionals and the public on environmental contributors to infertility, early pregnancy loss, and impacts on the developing fetus. Since CHE's early years, the Fertility and Reproductive Health Working Group has sought to bring attention to the growing body of research linking environmental factors to problems with reproductive health. In the
male, many environmental agents are associated with decreased sperm quality and increased risk of prostate cancer. Women are more susceptible to endometriosis, polycystic ovary disease, and problems with in vitro fertilization following exposure to some environmental chemicals. A substantial body of scientific literature demonstrates the crucial nature of fetal environmental exposures on developmental origins of adult health and disease.

Thanks to work done by CHE partners in recent the years, environmental issues are receiving greater attention. Researchers at the University of California's Program on Reproductive Health and the Environment (PRHE) have been instrumental in creating materials for educating clinicians and the public on environmental risks during the reproductive years. The American Society of Reproductive Medicine (ASRM) convenes a special interest group to encourage the study of environmental factors affecting reproductive health. The Association of Reproductive Health Professionals (ARHP) offers continuing education on multiple environmental health topics. Planned Parenthood Federation of America (PPFA) created a toolkit used at all 800 offices across the US to screen and counsel clients on environmental issues important to their health. The American Fertility Association (AFA) and RESOLVE, national associations dedicated to meeting the needs of couples experiencing infertility, provide information on environmental risk reduction to improve fertility. This sampling of CHE partners engaged in moving reproductive environmental health forward illustrates the progress that has been made in the last decade.

The CHE Fertility & Reproductive Health Working Group continues to advance research and translation into practice and policy, and facilitate collaboration on reproductive environmental health. CHE partners will recognize the methods used to accomplish these goals: a) a listserv to share new science; b) teleconference seminars on timely topics; c) and connecting and convening individuals to catalyze and/or augment collaborative initiatives. The Working Group also hosts the Fertility/Reproductive Health Online Abstracts Library, a searchable database of selected journal abstracts on a wide range of reproductive health topics.

A new venture within the Working Group seeks to maximize the national reproductive environmental health research agenda through collaborations across research institutions. The Women's Reproductive Environmental Health Consortium is a group of NIEHS researchers meeting via teleconference and at professional society meetings to share resources such as datasets and tissue banks, and to form partnerships for joint research proposals and publications. CHE facilitates and documents the Consortium's activities.

Topics of interest to the CHE Fertility & Reproductive Health working group also extend to other groups within CHE. Recent working group teleconferences include: "Breast Health & Early Life Exposures", and "Electromagnetic Frequency Radiation & Reproductive Health Risks". Topics of future calls include "Developmental Origins of Metabolic Disease" and "Pregnancy as a Vulnerable Period for the Mother".

It has been said that the measure of a society is how it treats its most vulnerable
members. The value of CHE is in facilitating a truly cross-disciplinary dialog, serving a vital role in highlighting evidence on environmental exposures that affect human reproduction and the developing fetus. Thanks to efforts by all of CHE’s partners, there are many more resources on environmental health available to clinicians and advocates in reproductive health. This will continue to improve the preservation of reproductive capacity and the protection of humans during their most susceptible period.

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CHE Partnership Calls

CHE Partnership call: The Dose Versus the Poison: "Low-Dose" Effects of Environmental Chemicals
Thursday July 21, 2012 at 10:00 am Pacific / 1:00 pm Eastern

RSVP for this call

Earlier this year, a landmark paper appeared titled *Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses*, published in *Endocrine Reviews*, a journal of the prestigious Endocrine Society. In this 78-page review, supported by 845 references, twelve leading environmental health researchers challenge the dogma of "the dose makes the poison," noting that endocrine-disrupting chemicals (EDCs) can have effects at low doses that are not predicted by effects at higher doses, and noting that fundamental changes in chemical testing and safety determination are needed to protect human health. The paper has received much attention. On this call, three of the authors of this paper will summarize their work and responses to it.

Featured speakers:

- **Laura N. Vandenberg, PhD**, Postdoctoral Fellow at the Center for Regenerative and Developmental Biology and Department of Biology (L.N.V.), Tufts University
- **R. Thomas Zoeller, PhD**, Professor, Biology Department, University of Massachusetts-Amherst, Amherst, Massachusetts
- **John Peterson Myers, PhD**, Founder, CEO and Chief Scientist, Environmental Health Sciences, Charlottesville, Virginia

The call will be moderated by Steve Heilig, CHE Director of Public Health & Education, and Director of Public Health & Education, San Francisco Medical Society. The call will last one hour and will be recorded for archival purposes.

Special Announcements

Healthy Environments Across Generations Conference: What's New?
On June 7-8, 2012 over a hundred and fifty participants gathered at the New York Academy of Medicine (NYAM) for the "Healthy Environments Across Generations" meeting which focused on the impacts that multiple, interacting environments can have on health (including the socioeconomic, chemical, food, built, natural, and psychosocial environments) as well as intergenerational and creative approaches to improve public and planetary health. CHE partnered with NYAM, AARP, the US EPA, The Intergenerational School, WE ACT for Environmental Justice, The Whole Child Center, and Grey is Green, along with over 60 co-sponsors, to put on this event.

"Healthy Environments Across Generations" was planned as a 'unconference' from the beginning. The absence of PowerPoint, the presence of conversational formats, the integration of the arts and music, the amplification of our collective experience through social media, sketches and videography, the lack of disciplinary boundaries, and the openness to creative thinking made this conference more than an event, but part of a mental shift toward collective, positive action based on hope, rather than fear.

Since the conclusion of the conference the conversation has continued via the conference Facebook page ("like" the page to join the ongoing conversation and stay up to date on conference follow-up activities and announcements). A listserv for conference attendees, cosponsors and content framers has been created to share opportunities and announcements related to intergenerational health across all environments and sectors. If you were not able to participate in the conference, but would like to join the listserv, email info@healthandenvironment.org.

Photos, art, additional resources and a video interview with Gail Christopher, DN, Vice President for Programs at the W.K. Kellogg Foundation, have been posted to the conference website. Steve Burdick of Burdick Designs sketched throughout the conference, capturing highlights, poignant moments and memorable quotes. Take a look at Steve's sketchbook and see what took place through the lens of an artist!

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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:

- June 21, 2012 - Expanding Our Understanding of Autism: Beyond Genetics to Whole Systems Approaches
- May 24, 2012 - Advancing Risk Assessment: Progress and Ongoing Obstacles
- April 26, 2012 - Designing Healthy Communities: A conversation with Dr. Richard Jackson
- April 17, 2012 - Nanotechnology: A Science and Policy Update

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 through social media:
Visit CHE’s blog to read a recent post by Peter Whitehouse, MD, PhD, co-founder of the Intergenerational School and professor of neurology at Case Western Reserve University, on the Healthy Environments Across Generations conference which took place in June at the New York Academy of Medicine. Comments are welcome.

Visit CHE's Facebook page.

CHE Climate Change
~ coordinated by Genon Jensen, for more information contact info@healthandenvironment.org

~ Health impacts from coal power plants in Europe
HEAL is becoming increasingly concerned about scientific findings on the health impacts from coal plants, and has started to bring together reports and case studies in order to raise awareness with politicians and the general public on this problematic energy form.

HEAL recently hosted a webinar to facilitate exchange between civil society and health experts. Air pollution continues to be a massive public health problem in Europe, and coal power generation contributes further to polluted air, blowing millions of tons of main air pollutants such as sulphur dioxide and particulate matter into the atmosphere. Higher rates of chronic respiratory and cardiovascular disease are the main consequences. In addition, nervous system damage or kidney disease can be caused by mercury and other heavy metals released. The long-term health effects also include impacts from climate change, which is fueled by the huge CO2 emissions from coal power plants. For example, heat-induced stress and mortality will be triggered by more frequent as well as more intense heat waves in Europe.

HEAL presented this evidence to an audience of more than 60 interested members of the public and has established contacts with scientists as well as environmental organizations who work on the impacts from coal power. Important studies on the health risks have been published recently by the American Lung Foundation and Physicians for Social Responsibility, whereas a report by the European Environment Agency last year gave an overall estimate of the environmental and health damage caused by energy facilities in Europe (estimated at €66 - 112 billion per year). HEAL will continue to provide scientific evidence for the health risks from coal power generation to bring out this evidence more clearly in the debates on Europe’s future energy mix.

If you are interested to learn more about health impacts of coal please contact Julia Huscher, HEAL’s Climate and Air Quality Policy Officer.

~ Respond to the EU consultation on climate adaptation
The EU Commission has launched a public consultation that seeks to collect opinions from public interest organizations and experts in the field of adaptation to climate change with a view to getting additional information for the preparation of the EU Adaptation Strategy. This Consultation on the Preparation of the EU Adaptation Strategy includes 20 questions covering aspects such as which groups might be most vulnerable to the impacts of climate change, how the private sector should adapt its actions, how member states should facilitate mitigating climate change, and more. The call for opinions is open until 20 August 2012.

~ **Work-in-progress strategy plans to choke out smog**
Ottawa and the provinces are poised to conclude Canada's first national air-pollution strategy, which includes a new standard that is expected to reduce smog significantly in the coming decade. Globe and Mail, Ontario.

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

~ **Retirement announcement**
Nancy Myers, MA, retired from the Science and Environmental Health Network (SEHN) at the end of June. Nancy served as SEHN's Communications Director and was instrumental and essential to launching and maintaining the work of the Cumulative Impacts Working Group, a collaborative project between SEHN and CHE. Nancy is lead author and editor of SEHN's how-to book on the precautionary principle, *Precautionary Tools for Reshaping Environmental Policy* (MIT Press 2006). She made the precautionary principle a useful tool for activists and policy makers since the 1998 Wingspread Conference. She wrote the Network's reports and proposals and co-edited SEHN's electronic newsletter, *The Networker*, with Carolyn Raffensperger. Nancy also managed the Cumulative Impacts website, which assembles the latest science, emerging best practices, analytical tools, and legal shifts that can reduce cumulative harm to the planet, communities, and people. CHE and the Cumulative Impacts Working Group want to thank Nancy for her many years of dedication and service to the field of environmental health.

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

~ **RFP announcement**: Now through Sept. 4, the American Diabetes Association is seeking basic, translational and clinical research applications for the American Diabetes Association and GlaxoSmithKline Award in the Microbiome and Metabolic Changes in Diabetes and Obesity. Studies focusing on the relationship between the microbiome and metabolism, including its role in the predisposition to and progression of obesity and diabetes, will be considered. Read more
~ New articles and research published in academic and scientific journals

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Kim JH, Hong YC. 2012. GSTM1, GSTT1, and GSTP1 Polymorphisms and Associations between Air Pollutants and Markers of Insulin Resistance in Elderly Koreans. Environ Health Perspect.
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CHE Fertility
~ coordinated by Karin Russ, karin@healthandenvironment.org

~ New articles and research published in academic and scientific journals

Human semen quality in the new millennium: a prospective cross-sectional population-based study of 4867 men
Considerable interest and controversy over a possible decline in semen quality during the 20th century raised concern that semen quality could have reached a critically low
level where it might affect human reproduction. The current study found only 23% of participants had optimal sperm concentration and sperm morphology. Over the 15 year study period, median sperm concentration increased from 43 to 48 million/ml (p=0.02) and total sperm count from 132 to 151 million (p=0.001). The median percentage of motile spermatozoa and abnormal spermatozoa were 68% and 93%, and did not change during the study period. BMJ Open.

**Fat intake linked to IVF success**

Women with a higher intake of dietary saturated fats have fewer mature oocytes available for collection in IVF, according to results of a study from the Harvard School of Public Health funded by the US National Institutes of Health. The study investigated the effect of dietary fat on a range of preclinical and clinical outcomes in women having IVF. Results showed that the intake of saturated fat was inversely related to the number of mature oocytes retrieved, while polyunsaturated fat consumption was inversely associated with early embryo quality. ScienceDaily.

**Cell phone radiation damages sperm**

The Environmental Working Group (EWG) published a review of ten studies that found cell phone radiation damages human sperm. EWG scientists have analyzed 10 scientific studies documenting evidence that cell phone radiation exposure leads to slower, fewer and shorter-lived sperm. Environmental Working Group.

**Exposure to environmental chemicals in the womb reprograms the rodent brain to disrupt reproduction**

Prenatal exposure to the environmental contaminants polychlorinated biphenyls, or PCBs, causes long-term changes to the developing brain that have adverse effects on reproductive function later in life, a new study finds. In females, PCB exposure also resulted in altered reproductive cycles in adulthood, and in males, puberty was delayed, compared with the offspring of nonexposed control rats. Newswise.

**In vitro fertilization and breast cancer: is there cause for concern?**

Researchers examined the incidence rate of breast cancer in a cohort of women undergoing treatment for infertility, comparing the rate in women who had in vitro fertilization (IVF) with those who did not. There was no overall increase in the rate of breast cancer in women who had IVF (HR 1.10, 95% confidence interval [CI] 0.88-1.36), but there was an increased rate in women who commenced IVF at a young age. Fertility & Sterility.

**Disinfectants in drinking water and birth defects**

Babies whose mothers drank tap water that contained two disinfection byproducts were more likely to be born with cleft palate and spina bifida. The results are the first to show a link between exposures to the byproducts in early pregnancy and birth defects in infants. Environmental Health Perspectives.

~ News Highlights ~
What's in your wallet? Another 'estrogen'
Two small investigations over the past 18 months turned up US greenbacks tainted with bisphenol A, a hormone-mimicking pollutant. One of them also detected BPA on paper currencies from 20 other nations. Now the authors of that second report have turned up BPA's cousin--bisphenol S--on many of those same banknotes in addition to 13 other types of papery products. Science News.

Smoking mothers' embryos 'grow more slowly'
Time-lapse photography has shown that embryos of smoking women develop more slowly. French academics took regular pictures of an egg from the moment it was fertilized until it was ready to be implanted into the mother. BBC.

CHE Regional Working Groups Updates

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

~ Working group call: Endocrine Disrupting Chemicals: New Directions in Science and Policy
Wednesday July 25, 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, or visit the call's webpage to RSVP online.

Overwhelming scientific evidence indicates that the presence of infinitesimally small quantities of endocrine disrupting chemicals (EDCs) in the womb can interfere with the normal signaling systems that determine every aspect of embryonic and fetal development. Disorders that have increased in prevalence in recent years such as abnormal male gonadal development, infertility, ADHD, autism, diabetes, thyroid disorders, and childhood and/or adult cancers are now being linked to fetal exposure. The discovery of prenatal effects from EDCs threw a monkey wrench in the current system of evaluating the safety of chemicals for the protection of public health. Join Dr. Carol Kwiatkowski, PhD, Executive Director and Senior Research Associate at The Endocrine Disruption Exchange (TEDX) for a discussion of why the old system of setting safety standards doesn't work, how the principles of endocrinology can be used to create a better system, and to hear the latest news on current directions in endocrine disruption science.

Featured speaker:
Carol Kwiatkowski, PhD, Executive Director and Senior Research Associate at The Endocrine Disruption Exchange (TEDX), a US-based nongovernmental organization founded by Theo Colborn and dedicated to compiling and disseminating the scientific evidence on health and environmental problems caused by low level exposure to
endocrine disrupting chemicals. Dr. Kwiatkowski joined the TEDX team in 2007. She created the Critical Windows of Development website tool, a timeline of how the human body develops in the womb, paired with animal research showing when low-dose exposure to endocrine disrupting chemicals during development results in altered health outcomes. In 2008 she became TEDX's first Executive Director and now oversees the development and execution of all of TEDX's programs. Prior to working at TEDX she was an Assistant Professor at the University of Colorado. Her training in behavioral science began at the College of William and Mary where she received her BA, followed by a PhD from the University of Denver.

CHE HEAL
~ coordinated by Lisette Van Vliet, lisette@env-health.org

~ Health conclusions from 'The Future We Want' Rio+20 outcome document
Civil society groups from all over the world voiced disappointment on the outcomes of the UN conference on sustainable development. While the document The Future We Want lacks concrete objectives and timelines, HEAL is nevertheless pleased to see that health has gained a more prominent role in the lead up to Rio.

In the final conference document, The Future We Want (PDF), the health frame has become more prominent and central to sustainable development discussions. Global leaders recognize the fundamental need to act on the social and environmental determinants of health to create inclusive, equitable, economically productive and healthy societies. The environmental prevention of disease is also featured in a specific paragraph.

Additional information:
- The assessment of the World Health Organization
- The analysis of the International POPs Elimination Network (IPEN)
- HEAL's article: Rio+20: Reinforcing the link between environment and health
- Rio+20 outcome document: The Future We Want

~ Special WHO meeting on the implementation of children's environmental health commitments
In 2010, health and environment ministers from the 53 countries of the WHO European region committed to measures to protect especially children's health from environmental threats in the Parma Declaration and Commitment to Act. This includes for the first time time-bound goals. Ministry representatives and stakeholders met recently to discuss progress on the implementation regarding the definition of indicators to measure progress.

HEAL is a member of the European Environment and Health Task Force (EHTF), the leading international body for implementation and monitoring of the Parma commitments as part of the European Environment & Health Process. EHTF members
meet annually in the period up to the next Ministerial Conference on Environment & Health 2016, but recently held a special meeting to discuss progress on indicators.

Five time-bound commitments to protect children were adopted in Parma:

- To provide each child by 2020 with safe water and sanitation in homes, child care centres, kindergartens, schools, health care institutions and public recreational water settings.
- To provide each child by 2020 with healthy and safe environments and settings of daily life to walk, cycle and undertake physical activity.
- To establish by 2015 indoor environments free of tobacco smoke in child care facilities, kindergartens, schools and public recreational settings.
- To have by 2015 environments free of toxic chemicals.
- To reduce by 2015 identified health risks from carcinogens, mutagens and reproductive toxicants, including radon, ultraviolet radiation, asbestos and endocrine disruptors.

WHO European member states are in the process of agreeing on the indicators to measure progress on the time-bound goals in a time of strained resources.

HEAL welcomes the efforts made by Member States to reach the goals listed above, but we remain concerned that measures are taken for all of the five goals listed above, including on the chemicals goals.

Scientists have recently warned about the consequences that prenatal exposure to hazardous chemicals, especially endocrine disruptors, can have for an increased risk of disease later in life. It is therefore important that health and environmental ministries of the 53 countries invest resources into setting up comprehensive indicators and conduct monitoring of chemical exposure to give guidance on phasing out and substitution of harmful chemicals.

~ ISDE, IDEA: Statement on Electromagnetic [radio frequency] Radiation [EMR] and Health Risks
International Society of Doctors for the environment (ISDE) and Irish Doctors' Environmental Association (IDEA) state there is sufficient scientific evidence to warrant more stringent controls on the level and distribution of electromagnetic radiation [EMR]. The joint statement and recommendations are part of a call by medical and scientific experts for safe technologies in schools. The report aims to inform schools, governing bodies, academy trusts, school boards, education authorities, teachers and parents of the professional, medical and scientific concerns about children using wireless technologies in schools. The information can be used to implement safe school policies, practices and guidance in order to safeguard the health and development of children and young people and to aid cognitive abilities, learning and achievement.

Download the report (PDF)
~ PAN Europe: Conflicts of interest still evident on new ESFA expert panels

Pesticides Action Network Europe (PAN), Corporate Europe Observatory, and Earth Open Source recently examined the Declarations of Interest (DOIs) of four of the eight new European Food Safety Authority (EFSA) expert panels, as well as their Scientific Committee. The analysis has raised questions about the effectiveness of EFSA's new rules on conflicts of interest. A first look at the Declarations of Interest shows that while some members with conflicts are no longer on the panels, the new rules do not appear to ban all conflicts of interest. This first screening of the new panels suggests that while improvements have been made, the current rules still leave considerable space for panel members to retain close industry affiliations. The new rules should be further strengthened to effectively ban industry influence. The EFSA founding regulation must also be revised to this end.

Read more

~ RES: Video on Phthalates' Symposium now available

Reseau Environnement Sante (RES) is pleased to present the video taken from the symposium held at the National Assembly on 10 April 2012 entitled Phthalates: Hold Up on Fertility! which discussed the scientific research to action on phthalates and endocrine disruptors and features Shanna Swann. The conference, as the video shows, discussed themes such as: Where are phthalates found? What are endocrine disrupters? What impact do they have on our health? What legislation on them is desirable?

Read more

CHE Washington

~ coordinated by Aimee Boulanger and Steve Gilbert, for more information contact info@healthandenvironment.org

~ Chapter 173-334 WAC, Children's Safe Product Reporting Rule

Washington State Department of Ecology has created a web portal to provide public access to the new, incoming data that is reported under this WAC. After August 31 2012, when the current reporting cycle is completed, the web portal will go live and be available via the internet.

Visit the portal

~ Call for comments: Draft Chemical Action Plan (CAP) for PAHs

Washington State Department of Ecology has released a Draft Chemical Action Plan (CAP) for PAHs. The draft is open for public comment from July 5 to September 4, 2012. Ecology will hold two public meetings in August to answer questions about the draft CAP.

Announcements and News Highlights

International meeting to focus on translating the scientific findings of endocrinology for human health risk assessment This workshop, taking place in
Berlin, September 11-13, 2012, seeks to lay out the evidence for low dose effects and non-monotonic dose responses in relation to endocrine active chemicals, with the goal of establishing whether the current observations are sufficient to re-examine the ways in which chemicals are tested for endocrine disrupting properties and how risk to human health may be managed. Registration is now open.

**Why is it so difficult to choose safer alternatives for hazardous chemicals?**
The discovery of persistent, bioaccumulative, and toxic flame-retardant chemicals has been a cause for considerable concern. Who decides on the replacements for toxic chemicals? And why does finding truly safer alternatives seem so difficult? Environmental Health Perspectives.

**FCC considers whether to study cellphone radiation**
The Federal Communications Commission is seeking to study whether it needs better guidelines to protect people from cellphone radiation, a question it hasn't posed in 15 years. Washington Post [Registration Required].

**Huffington Post: Better Safe Than Sorry: A New Era for Environmental Health?**
Steve Heilig, MPH, CHE Director of Public Health & Education, and Director of Public Health & Education, San Francisco Medical Society contributed this piece addressing the regulation of chemicals, the precautionary principle and CHE's contributions to the field of environmental health over the past decade.

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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.

**Environmental Health News: email, Facebook, Twitter and a website archive**
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Visit the EHN archives page
Friend EHN on Facebook by searching for Environmental Health News

**July 2012 issue of Environmental Health Perspectives available online**
Read more

**July 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.
Reports, Resources and Other Updates

New IOM report: Primary Care and Public Health: Exploring Integration to Improve Population Health
Primary Care and Public Health identifies the best examples of effective public health and primary care integration and the factors that promote and sustain these efforts, examines ways by which HRSA and CDC can use provisions of the Patient Protection and Affordable Care Act to promote the integration of primary care and public health, and discusses how HRSA-supported primary care systems and state and local public health departments can effectively integrate and coordinate to improve efforts directed at disease prevention. Download the report

A New Biology for the 21st Century
This report and accompanying video discuss how biology may hold the key to facing some of the world's most pressing challenges, including feeding a growing population, providing adequate health care, generating energy, and coping with climate change. Download the report and watch the video

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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