Will My Child Learn Green Chemistry?

Every other week my seven-year-old goes with his buddy after school to 'chemistry club'--meaning they spend an hour with a retired science teacher who taught in various schools for 40 years. His "lab" is something out of the early 20th century, complete with rows of dusty bottles with handwritten labels noting specific chemicals or simply "danger", wires and gadgets that cover shelves and spill out of boxes, and an antique wood stove that never quite gets the room warm. He introduced the periodic table on the first day, and since then, has shown them everything from electromagnetic fields to explosive chemical reactions. The boys love him, even though he shifts quickly from one experiment to the next and gives them information that I recall not learning until at least high school.

Given the 20 years I have worked on environmental health issues, I observe this class both with exhilaration--watching these young kids get excited about learning how the world works, and with discomfort--wondering if they are protected enough from hazardous exposures, knowing all too well what certain contaminants can do to undermine healthy development.
In the big picture, I also ponder whether children this age, when they reach middle and high school, will still be taught outdated methodologies that lead to the design and manufacture of chemicals that impair human and planetary health or whether they will grow up in a world where the principles of green chemistry are as fundamental to chemists as the periodic table.

What gives me hope that green chemistry will indeed become the norm are articles such as two published last week in *Environmental Health Perspectives*. The first, "Designing Safer Chemicals", by Dr. Linda Birnbaum, Director of the National Institutes for Environmental Health Sciences, very explicitly states the need to be able to identify potentially hazardous chemicals early in the design process before they enter the manufacturing phase. She also goes on to mention TiPED (Tiered Program for Endocrine Disruption), which is elaborated on in a second article, "Tiered Protocol for Sussing Out Endocrine Disruption". Given this clear signal that NIEHS and other research institutions are prioritizing the development and refinement of protocols not only for endocrine disruptors but for mixtures of a range of different chemicals (see also: "Unraveling the Health Effects of Environmental Mixtures: An NIEHS Priority") suggest that the tireless work of a number of researchers and NGO leaders is beginning to bear fruit.

In the meanwhile, organizations, such as GreenScreen, are prompting industry to shift away from the outmoded criteria they use for creating new chemicals and to stay ahead of the curve in terms of consumer demand for safer products. Other NGOs are pressuring decision makers to embrace public health policy that would include hazard-based prioritization and alternatives assessments of chemicals. Though these latter initiatives may not focus on the design phase of chemicals, they are essential in helping move many of the relevant sectors (science, economic and policy) towards integrating the principles of green chemistry principles in decision-making on all levels.

Yes, even if we stopped manufacturing all toxins tomorrow, we would still have an overwhelming legacy of contaminants with which to contend for decades to come. But I have to focus on the hope--on the possibility, even the probability, that green chemistry and related fields will be the cornerstone for my son's generation and beyond. For that, I have many of you to thank for your vision and persistence over the years.

I truly look forward to taking another collective step towards turning that hope into reality in 2013.

Elise Miller, MEd, CHE Director

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CHE Partnership Calls

CHE Partnership call: Biomonitoring: A Review of EU and US Studies, Public Health Policy and Chemical Regulation
Thursday January 24, 2013 at 9:00 am Pacific / noon Eastern

RSVP for this call

In late 2012, the European Union completed its first pilot biomonitoring study, which tested the blood and urine of 4000 mothers and children in 17 EU countries for biomarkers of several chemicals of concern. The success of this first study is fueling plans to continue biomonitoring on the EU level.

The US Centers for Disease Control and Prevention Environmental Health/National Health and Nutrition Examination Surveys (NHANES) have conducted ongoing assessments of the US population's exposures to environmental chemicals since 1999 and have recently issued an update for the Fourth National Report on Human Exposure to Environmental Chemicals, which included results from 2003-2004, as well as data from 1999-2000 and 2001-2002.

This CHE call on Thursday January 24, 2013 at 9:00 am Pacific / noon Eastern will feature overviews of each program with a focus on how biomonitoring data from each program have informed public health policy and regulation.

Featured speakers:

Dr. Ludwine Casteleyn, Project Leader for the COPHES/DEMOCOPHES (Consortium to Perform Human Biomonitoring on a European SCALE; Demonstration of a Study to Coordinate and Perform a Human Biomonitoring Study on a European Scale) Katholieke Universiteit Leuven, Belgium.

Dr. Mary Ellen Mortensen is the Senior Medical Toxicologist in the Division of Laboratory Sciences at the National Center for Environmental Health, Centers for Disease Control and Prevention (CDC), where she serves as an expert in Pediatrics and Medical Toxicology, primarily focusing on human exposures to environmental chemicals and toxic substances. A major aspect of her duties involves work on CDC's National Report on Human Exposure to Environmental Chemicals. She serves as one of CDC's representatives to the Interagency Coordinating Committee for the National Children's Study (NCS), an observational longitudinal study that will enroll and follow a nationally representative sample of approximately 100,000 U.S. children, on whom environmental exposure and other information will be gathered.

Respondents:

Lisette Van Vliet, PhD, Senior Policy Adviser, Chemicals and Chronic Disease Prevention, Health and Environment Alliance, Brussels, Belgium. Dr. Van Vliet covers REACH, and other EU chemicals legislation, focusing on endocrine disruptors, phthalates such as DEHP, and mercury. She joined the Health and Environment Alliance in 2005, initially working jointly with the International
Julia Brody, PhD, Executive Director of the Silent Spring Institute, Boston, Massachusetts. Dr. Brody is a leader in research on breast cancer and the environment and in community-based research and public engagement in science. Brody's current research focuses on methods for reporting to people on their own exposures to hormone disruptors and other emerging contaminants when the health effects are uncertain.

The call will be moderated by Sharyle Patton, director of Commonweal's Biomonitoring Resource Center. The call will last one hour and will be recorded for archival purposes.

Special Announcements

CHE's first e-book!
Don't miss the first CHE e-book, *Healthy Environments Across Generations*, highlighting key issues regarding the influences of the chemical, food, built, psychosocial, and socioeconomic environments on health across the lifespan. Included are video interviews with experts in many disciplines, as well as recommendations for collaborative initiatives to help promote health, from our conference at the New York Academy of Medicine in June 2012. In addition, check out the 4-minute video summary of the conference on the last page of the e-book. Visit the conference webpage and download the e-book

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:

- January 8, 2013 - [Breast Cancer and Occupational Health: A Discussion of a Canadian Case-Control Study](#)
- December 13, 2012 - [Methods for Screening and Assessing Chemicals](#)
- November 27, 2012 - [Dr. Barry Commoner: Reflections on a Life and Work](#)

You can subscribe via podcast to receive notifications of new call recordings added to the CHE archives. View a list of 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 recent posts including commentary on the proposed Gateway Pacific Terminal in Washington State from Nancy Hepp, MS, CHE's Research and Communications Specialist.

Visit CHE's Facebook page.
Join CHE on Twitter. Update: CHE is now tweeting during our Partnership calls. Join the online conversation by following CHE on Twitter.

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

~ Air pollution ranked as top health risk factor: Global Burden of Disease Study
A recent, major Global Burden of Disease Study recognizes outdoor air quality as a top health risk factor for public health. Published in the Lancet, the study is the largest ever systematic effort to describe the global distribution and causes of a wide array of major diseases, injuries, and health risk factors. For the first time, the Global Burden of Disease assessment has ranked an environmental factor among the more widely discussed 'life-style' risk factors.
Read the executive summary of Global Burden of Disease Study 2010 (published December 13, 2012)
Read more

~ Human health benefits from reducing short-lived air pollutants and methane concentrations
A recent global study has estimated that, each year, 1.5 million people die early from cardiopulmonary diseases and 0.1 million people die early from lung cancer caused by exposure to PM2.5 pollution. A further 0.4 million people are estimated to die early from respiratory diseases caused by exposure to surface ozone (O3) pollution. Although short-lived air pollutants have the largest influence on air quality and premature deaths, controlling methane emissions as well would improve air quality and reduce the number of people dying prematurely each year, the study suggests.
Read the study abstract

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

~ Special journal series: Climate change and toxicology
The January issue of the journal Environmental Toxicology and Chemistry includes a series of articles from a Society of Environmental Toxicology and Chemistry workshop designed to answer the following question: How will global climate change influence the environmental impacts of chemicals and other stressors and the way we assess and manage them in the environment?
Read more
~ Health must be central to climate action
Health and medical organizations from around the world have developed a joint declaration on how to better protect and promote our health. It was launched at the UN climate negotiations in Doha, and recently featured in the prestigious Guardian Sustainable Business section.

~ Health costs of climate change: Climate Vulnerable Monitor, 2nd edition: A guide to the cold calculus of a hot planet
The DARA report provides a reassessment of the human and economic costs of the climate crisis. It synthesizes the latest research and scientific information on the global impact—including benefits and losses—of climate change and the carbon economy in economic, environmental, and health terms. The report states that climate change already causes 400,000 deaths each year on average. The report further states inaction on climate change can be considered a leading global cause of death.

Read the report's executive summary

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

~ Association of all-cause mortality with overweight and obesity using standard body mass index categories: a systematic review and meta-analysis
A review by Flegal et al. published in JAMA received a lot of attention this month. It found that being overweight (measured by BMI) was associated with a lower risk of mortality than being normal weight (controlling for smoking and pre-existing diseases), while higher levels of obesity were associated with higher mortality. What might explain these findings? An accompanying editorial by Heymsfield and Cefalu suggests that aside from the limitations of using the BMI measurement, doctors are more aggressive in managing risk factors in those who are overweight, or perhaps some excess weight can in fact be protective. They suggest that not all people who are overweight, particularly those with chronic diseases, should be candidates for weight loss. Another recently published study by Hong et al. suggests that persistent organic pollutants (POPs) may play a role in this "obesity paradox." Adipose tissue may provide a relatively safe place to store persistent organic pollutants, since the relationship between obesity and mortality varied depending on levels of POPs in the body.

~ Interview: Arsenic and diabetes
Environmental Health Perspectives has an online podcast available of an interview with Dr. Ana Navas-Acien, "Exploring links between arsenic and diabetes." Also on EHP, Bob Weinhold summarizes recent research in an article, "PCBs and Diabetes: Pinning Down Mechanisms."

CHE Working Group on Electromagnetic Fields
~ coordinated by Antoinette Stein, tweil@igc.org

~ BioInitiative report updated for five-year anniversary
The BioInitiative 2012 Report updates five years of science, public health, public policy and global response to the growing health issue of chronic exposure to electromagnetic fields and...
radiofrequency radiation in the daily life of billions of people around the world. Special concerns are the care of the fetus and newborn, the care for children with learning disabilities, and consideration of people under protections of the Americans with Disabilities Act, which includes people who have become sensitized and physiologically intolerant of chronic exposures. The 2012 Report now addresses these issues as well as presenting an update of issues previously discussed. Read more and download the report

~ American Academy of Pediatricians Endorses Cell Phone Safety Legislation
The AAP, which represents "60,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents, and young adults" has endorsed H.R. 6358, the Cell Phone Right to Know Act. The act provides for warning labels on cell phones. It would also create a new national research program to study cell phones and health and require the Environmental Protection Agency to update the outdated Specific Absorption Rate. Read more

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

~ France's important move towards phasing out phthalates in medical devices
In December, France passed a law that for the first time bans the use of tubes containing di-(2-ethylhexyl) phthalate (DEHP) in paediatrics, neonatology and maternity wards in hospitals. Health Care Without Harm. Read more

~ New York county first to ban BPA in receipts
Suffolk County, New York, on Long Island, has become the first county in the nation to ban the use of bisphenol A (BPA) in sales receipts. Research suggests sales receipts could expose people to as much, or more, BPA than plastic food packaging and containers. Daily Green. Read more

~ Call for abstracts: ARHP: Reproductive Health 2013
The Association of Reproductive Health Professionals announces the call for abstracts for its 50th annual meeting. The selection committee will choose abstracts to be included in the program that are designed to improve participants' competence and performance in practice. Abstracts are due by Friday February 8, 2013 at 5:00 pm Eastern time. Read more

~ EHP papers of the year: Prenatal pesticides and adverse effects on cognitive development
EHP is pleased to announce that the 2012 Paper of the Year award will be shared by three papers published in the same issue. As a group, these papers add substantial weight to the evidence linking OP pesticides with adverse effects on cognitive development by simultaneously reporting consistent findings for three different groups of children. Environmental Health Perspectives. Read more

~ New articles and research published in academic and scientific journals
Study: Fetal growth and prenatal exposure to bisphenol A: the Generation R study
Our findings suggest that maternal urinary BPA may impair fetal growth. Since previous
studies have shown contradictory findings, further evidence is needed to corroborate these findings in the general population. *Environmental Health Perspectives*.

**Study:** High dietary intake of saturated fat is associated with reduced semen quality among 701 young Danish men from the general population

Saturated fat intake has been associated with both cardiovascular disease and cancer risk, and a newly published study found an association between saturated fat intake and a lower sperm concentration in infertile men. *American Journal of Clinical Nutrition*.

**Study:** Persistent Environmental Pollutants and Couple Fecundity: The LIFE Study

The adjusted reduction in fecundability associated with standard deviation increases in log-transformed serum concentrations ranged between 18%-21% for PCB congeners 118, 167, 209, and perfluorooctane sulfonamide in females, and 17%-29% for p,p-DDE and PCB congeners 138, 156, 157, 167, 170, 172, and 209 in males. The strongest associations were observed for PCB 167 (FOR 0.79; 95% CI 0.64, 0.97) in females and PCB 138 (FOR=0.71; 95% CI 0.52, 0.98) in males. *Environmental Health Perspectives*.

**Review:** National, regional, and global trends in infertility prevalence since 1990: A systematic analysis of 277 health surveys

Researchers found that in 2010, 1.9% of women aged 20-44 years who wanted to have children were unable to have their first live birth (primary infertility), and 10.5% of women with a previous live birth were unable to have an additional live birth (secondary infertility). The researchers found that the levels of infertility were similar in 1990 and 2010, with only a slight overall decrease in primary infertility (0.1%, but with a more pronounced drop in Sub-Saharan Africa and South Asia) and a modest overall increase in secondary infertility (0.4%). *PLoS Medicine*.

**CHE Healthy Aging Initiative**

~ coordinated by Maria Valenti, mvalenti@igc.org

~ **New publication:** *Aging and Vulnerability to Environmental Chemicals: Age-related Disorders and their Origins in Environmental Exposures* Edited by noted environmental health expert Bernard Weiss (Editor). Dr. Weiss is Professor of Environmental Medicine at the University of Rochester School of Medicine and Dentistry, where he has been a member of the faculty since 1965.

From the publisher:
"This book provides a detailed review of current knowledge about the possible associations between a variety of chemical contaminants and adverse effects later in life. It will serve as a guide to policy decisions about protecting us from chemical exposures that distort the aging process.

It provides a guide to current understanding of how our contaminated environment may be influencing the aging process and contains examples of approaches that will help us undertake further research on this topic. It will help alert policy makers to the implications of chemical pollution for aging populations and will help formulate initiatives for environmental protection." [Read more](#)

~ **Upcoming conferences and meetings**

February 7-9, 2013: [New Partners for Smart Growth](#), Kansas City. CHE will present a 90-
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Designing Healthy Environments Across Communities and Generations in partnership with the UW Population Health Institute County Health Rankings & Roadmaps program. Speakers will include CHE working group coordinator Maria Valenti, moderator; Ted Schettler, SEHN and CHE; Erika Svendsen, US Forest Service; Angela Russell, Community Engagement Lead on the County Health Rankings project at the University of Wisconsin Population Health Institute; Leslie A. Meehan, Director of Healthy Communities for the Nashville Area Metropolitan Planning Organization; and Arthur M. Wendel, Team Lead, Healthy Community Design Initiative, National Center for Environmental Health, Centers for Disease Control and Prevention.

March 3-6, 2013: Environmental Health 2013: Science and Policy to Protect Future Generations, Boston, Massachusetts. The Healthy Aging Initiative will present a poster at this conference on "Environmental Determinants of Health Across the Lifespan: Opportunities for Health-Promoting Interventions". Working group coordinators from CHE's Diabetes-Obesity Spectrum Working Group and Fertility and Reproductive Health Working Group will also present.

March 12-16, 2013: Aging in America Conference, Chicago. CHE will present two 90-minute panels, including Safer Chemicals, Healthier Aging: A Prescription for Positive Change with presenters Medha Chandra, Pesticide Action Network North America; Kathey LaRoche, The Health Councils of Florida; Ted Schettler, SEHN and Collaborative on Health and Environment; and Kathy Sykes, US Environmental Protection Agency. The second panel, Healthy Environments Across Generations: A Lifecourse Approach to Health will feature presenters Ted Schettler of SEHN and CHE; Yolanda Savage-Narva, America Walks; Harry (Rick) Moody, AARP; Peter Whitehouse, Intergenerational School; and Jennie Smith, Elders Share the Arts. CHE will also be organizing an Aging and the Environment breakfast with AARP.

CHE Regional Working Groups Updates

CHE Alaska
~ coordinated by Pamela Miller, pamela@akaction.org

~ CHE-AK call: The Toll of Alaska's Coal: Health Impacts of Coal Export
Wednesday January 23, 2013 at 9:00 am Alaska / 10:00 am Pacific / 1:00 pm Eastern
RSVP for this call

Alaska possesses roughly half the nation's coal--or nearly 1/8th of world reserves. As a result, there is growing interest in developing Alaska's coal resources for export to Asia. But at every stage--from mining, transportation, combustion, and disposal--coal development threatens human health, air quality, and water quality. There are four proposed strip mines in Alaska's Mat-Su Valley and another at Chuitna. Presenters will discuss the adverse health effects of inhaling diesel particulate matter and coal dust--a significant risk for those communities along truck and train transportation routes--and how toxic emissions (which include mercury and other heavy metals) from coal-fired power plants in Asia travel back to Alaska, polluting our air, water, and fish.

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

~ Building a pesticide free future: How to get involved in the Pesticide Action Week!
For several years HEAL has been a supporting partner of the international Pesticide Action Week, which takes place annually across the globe. From March 20-30, 2013, the 8th anniversary will have a special focus on endocrine disrupting pesticides, and will aim at showcasing the growing alternatives to pesticides use through discussions, workshops, information stands, exhibitions, etc. In 2012, 750 events took place in 21 countries. This international event aims to raise awareness on the health and environment risks of synthetic pesticides, highlight alternative solutions and build a global grassroots movement for a pesticide-free world.

More information
View the program

~ Global mercury treaty would make Europe's children brainier
A recent study published in Environmental Health highlights that preventing environmental exposure to mercury could save the EU alone 8-9 billion per year by protecting children's brain development. Given the worrying risks especially prenatal exposures to mercury, a strong, legally binding treaty to control mercury pollution is absolutely necessary.

HEAL joins other health leaders who are calling for a strong, legally binding treaty to control mercury pollution absolutely imperative. This recent research shows the extent of harmful exposures in Europe—and the economic benefits to the tune of billions of Euros each year which would be derived from preventing these exposures.

Read more
Read the study abstract

~ Last chance to develop a strong treaty to reduce mercury exposure
New scientific evidence on global mercury seafood contamination highlights adverse health effects occurring below the level which is considered "safe". This and other scientific evidence clearly demonstrates that the mercury health threat has grown substantially over the last decade.

We urge government representatives to support the adoption of a strong international agreement on mercury when governments meet in Geneva in January 2013. We are calling for a legally binding agreement, national implementation plans and specific health protective measures to enhance awareness regarding the adverse health effects of mercury exposure.

Read more

CHE Oregon

~ 5th Annual Northwest Environmental Health Conference
The 5th Annual NW Environmental Health Conference will be held March 15, 2013, in Portland, Oregon at Portland State University. This conference will host leading scientists, researchers, and health professionals to continue our robust dialogue on the interrelationship between the environment and health and healthcare practices. The 2013 conference theme is epigenetics: how environmental factors, particularly chemicals in our environment, can change the expression of our genes, impacting health and disease over generations. Epigenetics is a crucial topic, especially in pediatric healthcare. Presentations will also cover a range of topics including environmental justice, environmental toxicants, built environment, and sustainable practices in health care. For more details, please visit the conference website.

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

~ CHE-WA Children's Environmental Health Working Group meeting
Thursday, January 10, 2013 from 9:30-11:30 am Pacific
US Department of Health & Human Services, Room #204, 2201 6th Avenue, Seattle

Margo Young (EPA) & Carolyn Gleason (HRSA) will provide an overview of the November, 2012, Commonweal-sponsored Reproductive Environmental Health Training.

Please RSVP to Gail Gensler at gail.gensler@kingcountry.gov. You can attend in person or by phone. To participate by phone: 1-866-756-1071, Passcode: 9016859

~ Special Event: Environmental Toxins & Our Health: How Do We Define & Promote Prevention?
Washington Physicians for Social Responsibility, with CHE-Washington as a co-sponsor, is providing a free community event featuring renowned local providers, researchers and educators on Thursday January 17, 2013 from 6:30-8:30 pm at the South Whidbey Commons, 124 Second Street, Langley Washington (Whidbey Island).
More information

~ 2nd Annual Children's Environmental Health Research Matters Conference
The University of Washington Northwest Pediatric Environmental Health Specialty Unit (PEHSU) and Center for Child Environmental Health Risks Research (CHC) are pleased to announce the 2nd annual Children's Environmental Health Research Matters Conference will take place on February 26, 2013 at the University of Washington Husky Union Building. The conference will highlight regional research contributions and explore the connection to policy and practice. There is no registration fee. For more details, please visit the conference website.

Announcements and News Highlights

_Lancet_ highlights early and toxic exposures For the first time, the leading international health journal, The Lancet has featured the need to address early-life and toxic exposures to metals, chemicals and air pollution in the prevention of non-communicable disease. In early January a commentary article appeared in the journal by a team of experts, many of them CHE partners, who took part in the Prenatal Programming and Toxicity (pptox) III conference in Paris in May 2012.
Read more

_Environmental Health News_ Announces Top Topics of 2012
The EHN team hand-picked 50,412 articles from media around the world on a wide variety of environmental topics in 2012. Take a look at what they have selected as their top topics of the year, including chemical hazards in low-income communities of color across the nation; flame retardants; weather-related disasters; large-scale environmental protests; and the most under-covered topic of the year--Canada's overhaul of environmental protections and axing of scientists, with little public input.
Read more

EPA report highlighting chemical dangers to children stalled
America's Children and the Environment, Third Edition, is a sobering analysis of the way in which pollutants build up in children's developing bodies and the damage they can inflict. The report, which is fiercely contested by the chemical industry, was referred to the White House Office of Management and Budget (OMB), where it still languishes.

Read more

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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
Visit the website
Visit the EHN archives page
Friend EHN on Facebook by searching for Environmental Health News

January 2013 issue of Environmental Health Perspectives available online
Read more

January 2013 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

EPA releases report on fracking and drinking water
The US Environmental Protection Agency (EPA) has released a report highlighting the progress it has made on its national study to understand the potential impacts of hydraulic fracturing on drinking water resources.

Read more

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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