



Converging Environmental CRISES

A Teach-in on Energy, Climate Change,
Water, Agriculture and Population

April 10, 2008, 11 a.m. to 4 p.m. EDT

<http://sg60.oar.net>

Online Presenters:

(Additional info and schedule on following pages.)

Roscoe Bartlett, Republican congressman from Maryland and co-chair of Peak Oil Caucus

Topic: Opening remarks on the "Teach-In"

Dan Bednarz, PhD, Energy & Healthcare Consultants, Pittsburgh, Penn.

Topic: Summing Up: Abandoning Silos

Jason Bradford, PhD, population biologist and founder of Willits Economic Localization, Willits, Calif.

Topic: Removing fossil fuels from the U.S. food system

Kristin Bradford, MD, Little Lake Health Center, Willits, Calif.

Topic: Energy, climate and the future of hospital care

William Catton, Jr., PhD, emeritus professor of sociology, Washington State University, Pullman, Wash.

Topic: Human economic activity and natural ecology

Mac Crawford, PhD, assistant professor, OSU College of Public Health's Division of Environmental Health Sciences, Columbus, Oh.

Topic: Public health response to peak oil, climate change, water shortages and population growth

Dick Jackson, PhD, director of the Graham Environmental Sustainability Institute at The University of Michigan, Ann Arbor, Mich.

Topic: Urban sprawl and human health

Joel Kreisberg, DC, MA, Teleosis Institute, Berkeley, Calif.

Topic: Health care, water and environmental consequences of pharmaceutical consumption

Walt Lierman, PhD, economic consultant, Portland, Ore.

Topic: Ecological economics and the costs of climate change mitigation

Jessica Pierce, PhD, bioethicist, Longmont, Colo.

Topic: Sustainable health: An exploration of the moral terrain

Ken Smail, PhD, professor emeritus of Anthropology, Kenyon College, Gambier, Oh.

Topic: Global population reduction

Don Spady, MD, associate professor of pediatrics, Department of Pediatrics and Public Health Sciences, University of Alberta

Topic: Comparing the U.S. and Canadian health systems

Terry Tamminen, former director of the California Environmental Protection Agency, author and strategist on energy and the environment

Topic: Solutions for the climate change challenge

Gail Tverberg, actuary, Tverberg Actuarial Services, Atlanta, Ga., and analyst for TheOilDrum.com

Topic: Expected economic impacts of an energy downturn



Global warming. Energy depletion. Overpopulation. You are only as healthy as the world you live in. Without awareness and significant change, Earth's once bountiful treasures will be depleted. On Thursday, April 10, researchers at The Ohio State University College of Public Health will gather national experts for a conversation on the state of our planet's health.

"Converging Environmental Crises" is a Web-based conference on topics such as global warming, overpopulation and energy depletion. To listen and view the conversation, visit <http://sg60.oar.net>, from 11 a.m. to 4 p.m., April 10.

Presented by



<http://cph.osu.edu>

Questions? Contact Mac Crawford, assistant professor, OSU College of Public Health's Division of Environmental Health Sciences at mcrawford@cph.osu.edu.



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Schedule of Events

PART 1: **Introduction to Crises**

11 a.m.

(Live, The Ohio State University)

Introducing presenters: Dan Bednarz, PhD, Energy & Healthcare Consultants, Pittsburgh, Penn.; and Mac Crawford, PhD, assistant professor, OSU College of Public Health's Division of Environmental Health Sciences, Columbus, Ohio.

11:15 a.m.

(Live, Otterbein College)

Special guest: Heidi Ballard, PhD, associate professor, Otterbein College Department of Sociology, will join the teach-in live with her environmental sociology class.

11:30 a.m.

(Prerecorded, 15 min.)

Presenter: Congressman Roscoe Bartlett, Republican congressman from Maryland and co-chair of Peak Oil Caucus

Topic: Opening remarks on the teach-in

Bio-sketch: Now serving his eighth term in the U.S. House of Representatives, Congressman Bartlett considers himself a citizen-legislator, not a politician. Prior to his election to Congress, he pursued successful careers as a professor, research scientist, inventor, small business owner and a farmer.

Bartlett was first elected in 1992 to represent Maryland's Sixth District. One of three scientists in Congress, Bartlett also is a senior member of the Science Committee serving on two of its subcommittees — Energy and the Environment, and Research and Science Education.

11:45 a.m.

(Prerecorded, 30 min.)

Presenter: Terry Tamminen, former director of the California Environmental Protection Agency, author and strategist on energy and the environment

Topic: Global Warnings: Solutions for the Climate Change Challenge

Summary: Is there hope of addressing the climate change challenge before the impacts are irreversible and ever-more catastrophic?

With a growing population and more people raising their standard of living (and therefore consumption) to unsustainable levels every year, it is difficult to be optimistic.

New policies and fresh leadership — often



How to Listen

Visit <http://sg60.oar.net>

11 a.m. to 4 p.m., April 10, and select
“Converging Environmental Crises”
in the pull-down menu.

from unexpected places — offer hope that we can tackle the defining issue of our time and prosper in the 21st Century.

Drawing from the experiences of many nations and the “living laboratory” of California, this presentation outlines the steps underway — and those still needed — to win the battle over human-caused climate change.

The presentation also examines the price we are already paying for our fossil fuel addiction — a cost that is often hidden from the public and regulators alike — as well as the future we face if we fail to evolve beyond “business as usual.”

Bio-sketch: From his youth in Australia to career experiences in Europe, Africa and the United States, Tamminen has developed expertise in business, farming, education, art, government and the environment.

In 2003, Gov. Arnold Schwarzenegger appointed Tamminen as secretary of the California Environmental Protection Agency and later as cabinet secretary, which is the chief policy advisor to the governor.

In 2007, Tamminen was named the Cullman Senior Fellow and director of the Climate Policy Program of the New America Foundation. He also was appointed operating advisor to Pegasus Capital Advisors.

Tamminen lectures and provides private consulting services to a variety of clients, including governors and Canadian premiers, on climate and energy policy. His latest book, *Lives Per Gallon: The True Cost of Our Oil Addiction* (Island Press), is a timely examination of our dependence on oil and a strategy to evolve to more sustainable energy sources.

12:15 p.m.

(Prerecorded, 30 min.)

Presenter: Gail Tverberg, actuary, Tverberg Actuarial Services, Atlanta, Ga., and analyst for TheOilDrum.com

Topic: Expected Economic Impacts of an Energy Downturn

Summary: Our energy supply and many of our resources are becoming more and more constrained. We live in a finite world, and we are reaching limits in many ways — easy to extract oil is being exhausted; fresh water is in increasingly short supply; and climate change caused by human activity is becoming more of an issue. Because of these constraints, it is likely that economic growth will stagnate and eventually decline.

Our economic system is not set up to handle stagnation and decline. There is a huge amount of debt outstanding. This debt becomes very difficult to pay back in a declining economy. Promises that have been made — in the form of insurance policies, social security plans and pension plans, become nearly impossible to keep. Eventually, some sort of break is likely, analogous to cutting up society's credit cards.

In the long run, we can expect a declining standard of living, as more and more people share an increasingly resource constrained world.

Bio-sketch: Gail Tverberg is a casualty actuary who has spent much of her career working with medical malpractice insurance. In recent years, she has become interested in how energy issues affect the insurance community and the world in general. She now writes for TheOilDrum.com and consults on energy-related issues.

12:45 p.m.

(Prerecorded, 45 min.)

Presenter: William Catton, Jr., PhD, emeritus professor of sociology, Washington State University, Pullman, Wash.

Topic: From Tin Woodman to Dinosaurs: Prosthetic Humanity's Damaged Future

Summary: The Tin Woodman we read about in the Land of Oz as a child was the product of multiple self-inflicted wounds that required replacement of one body part after another by metal prostheses.

Recognizing a hearing aid as a familiar prosthetic device that restores lost auditory power, Catton extends the prosthesis concept to regard radios and TVs as prosthetic devices enlarging the scope and range of our ears and eyes. Various machines enlarge other human abilities, enabling modern humans to act as giants, with giant resource appetites and environmental impacts.



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Humans have prostheses for intangible traits, too, Catton says. A plastic bubble, for instance, serves as a prosthetic substitute for the child SCID patient's missing immune system. However, it severely restricts the patient's ways of interacting with the world. Healthy humans, he says, all live inside of conceptual bubbles, which are useful but constraining and subject to obsolescence. The "bubbles" restrict how we see our world. The bubble of 20th century experience obstructs our understanding of the future into which we "giants" are plummeting.

To escape our bubble, Catton says, we must see how our prosthetic technology turned us into "Homo colossus."

"We live on a finite planet and face a carrying capacity bottleneck in the 21st century," Catton says.

Bio-sketch: Before retiring in Lakewood, Wash., Catton taught sociology and environmental science. He also published many articles and several books including *Overshoot: The Ecological Basis of Revolutionary Change*. Originally published by the University of Illinois Press in 1980, the book has been translated into Russian and is currently being translated into Spanish for publication in Chile.

1:30 p.m.

(Prerecorded, 30 min.)

Presenter: Dick Jackson, PhD, director of the Graham Environmental Sustainability Institute at The University of Michigan, Ann Arbor, Mich.

Bio-sketch: Jackson is an internationally recognized environmental health expert, who in recent years has focused on the links between urban sprawl and human health. He was named the first director of the Graham Environmental Sustainability Institute at the University of Michigan, and was the lead CDC official in a multi-agency effort to establish the U.S. National Pharmaceutical Stockpile. His work led to the establishment of the California Birth Defects Monitoring Program, as well as state and federal laws that eliminated the use of several hazardous pesticides. While at the CDC in Atlanta, he established the national asthma epidemiology and control program, and oversaw the childhood lead poisoning prevention program. He earned an MD from the University of California, San Francisco, in 1973, and an MPH degree from the University of California, Berkeley, in 1979.

PART 2: Breakout Sessions

Online visitors will have 1 hour to view a number of televised sessions on subjects such as climate, peak oil, agriculture and population.



2 to 3 p.m.

CLIMATE

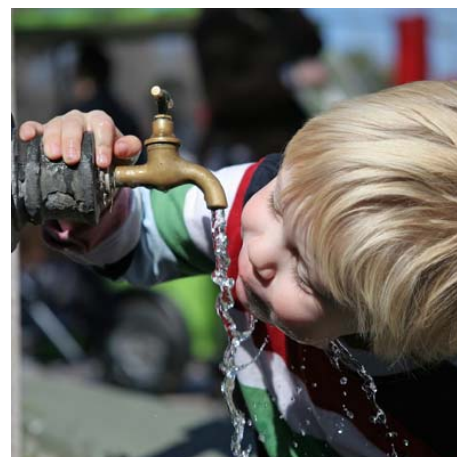
(Prerecorded, 30 min.)

Speaker: Kristin Bradford, MD, Little Lake Health Center, Willits, Calif.

Topic: Energy, Climate and the Future of Hospital Care.

Summary: There is a paucity of policy analysis or strategic planning for how the intertwined topics energy scarcity and climate change will affect the health care systems and public health. We in the health sciences need to pay attention to how these driving forces, which stem from ecological realities and socioeconomic trends will transform the operation of health systems, especially hospitals. Indeed, we should not shrink from considering worst-case scenarios rather than just taking account of the incremental effects of peak oil and climate change.

Bio-sketch: Bradford is a family physician at a federally-qualified health center in rural Northern California. She is the wife of a farmer working on localizing their community food system, and mother of twin boys. She walks and bikes to work and is part of WHAT (Willits Healthy Action Team) which is working to improve pedestrian safety in her town.



(Prerecorded, 30 min.)

Presenter: Joel Kreisberg, DC, MA, Teleosis Institute, Berkeley, Calif.

Topic: Healthcare, Water and Environmental Consequences of Pharmaceutical Consumption

Summary: Beginning in 2006, regional programs throughout the United States began collecting expired and unused pharmaceutical medicines in an effort to divert these potentially harmful substances from entering public waterways and drinking water.

With a 70-percent increase in drug prescriptions during the past 10 years, preliminary findings of the Green Pharmacy Pollution Prevention Program at the Teleosis Institute suggest that the ecological consequences of unused pharmaceutical medicine are significant in terms of environmental degradation, economic waste and lost opportunities for community and population health.

Shifting from pharmaceutical interventions toward preventative community health care could vastly relieve the environmental burden of pharmaceutical medicine while providing more effective health care outcomes for members of our society.

Bio-sketch: Kreisberg is the founder and executive director of the Teleosis Institute, which is dedicated to reducing health care's footprint while broadening its ecological vision.

Kreisberg is an adjunct professor at the School of Holistic Studies at John F. Kennedy University. He completed his Doctor of Chiropractic at New York Chiropractic College, and received a Master of Arts degree in Integral Ecology from Prescott College.

Kreisberg has written several books on homeopathy, as well as taught and lectured worldwide for more than 20 years. He also maintains a private practice in Berkeley, Calif.

(Video conference, 30 min.)

Presenter: Walt Lierman, PhD, economic consultant, Portland, Ore.

Topic: The Economics of Climate Change Mitigation

Summary: Recognition of the long-term impact of climate change has led to calls for modifying economic behavior and consumption, especially in the industrialized nations of the world.

While changing wasteful consumption and production activities can produce benefits, it will also result in tremendous costs on a national level.

If the full extent of some of these recommendations is embraced, a redistribution of benefits and costs will likely occur. Therefore, as developed economies grapple with issues of climate change and peak oil, the discussion



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must include the “Big Three” economic issues – externalities, production trade-offs and technological innovation.

Bio-sketch: Lierman is an economist with widespread experience providing detailed economic analysis in a number of areas including 10 years experience providing forensic economic litigation support in estimating economic damages and 15 years experience in health care economics.

Lierman’s other areas of expertise include natural resource economics, and quantitative modeling and forecasting. He also has more than 10 years teaching experience and is currently an adjunct professor teaching MBA and undergraduate level courses.

Lierman recently teamed with Don Asa, a noted commercial trucking accident expert, to co-author a book on economics and safety in the commercial trucking industry.

PEAK OIL

(Prerecorded, 30 min.)

Presenter: Don Spady, MD, associate professor of pediatrics, Department of Pediatrics and Public Health Sciences, University of Alberta, Edmonton, Alberta, Canada

Topic: Comparing U.S. and Canadian Health Systems

Summary: The differences between the U.S. and Canada will alter their initial respective responses to peak oil. Major Canadian advantages are its relative energy wealth and access to publicly funded, universal health care, plus, it has less income inequality than the U.S.

Major disadvantage are that Canada is a northern country, with infrastructure requiring heating for many months of the year and a relatively small population which is spread thinly, thereby making for expensive infrastructure development and maintenance.

Further, Canada’s prairies, which currently provide a large amount of Canada’s basic foods, may suffer during the next decades from the various consequences of climate change.

Bio-sketch: Spady is a pediatrician and epidemiologist, as well as an associate professor in the Department of Pediatrics and Public Health Sciences in the Faculty of Medicine and Dentistry and the School of Public Health at the University of Alberta, in Edmonton, Canada. He has done research in childhood nutrition, body composition, epidemiology of childhood morbidity and environmental law.

Spady recently became interested in peak oil and health has devoted much time to educating himself about this topic. He hopes to find another individual living in Canada who is interested in the consequences of peak



petroleum on health and health care.

AGRICULTURE

(Prerecorded, 30 min.)

Presenter: Jason Bradford, PhD, population biologist and founder of Willits Economic Localization, Willits, Calif.

Topic: Removing Fossil Fuels from the U.S. Food System

Summary: Ecological Footprint analyses, risks to the climate system from excessive greenhouse gases, and supply constraints, require a rapid transition away from fossil fuels in all sectors of the economy. Healthy and socially stable societies need high quality, reliable food. The U.S. food system is very dependent upon fossil fuels, consuming about 15 percent of the nation’s energy appetite.

Bradford’s presentation reviews where energy is spent in the food system overall, and then demonstrates how one farm is working to curtail fossil fuel inputs.

Bio-sketch: Bradford has a PhD in biology with an academic background in the evolution of plants and ecosystem responses to climate change. He moved to Willits, Calif., and helped start a nonprofit focused on sustainability and local economics. Bradford also began a small farm at an elementary school that he will describe in his presentation.

POPULATION

(Live, The Ohio State University)

Presenter: Ken Smail, PhD, Professor Emeritus of Anthropology, Kenyon College, Gambier, Ohio
Topic: Confronting the Inevitable? Global Population Reduction and Other Inconvenient Truths

Summary: During the past 15 years, Smail has routinely called attention to the growing “disconnect” between reasonably accurate demographic projections of future global population growth (9 billion by the mid-21st century) versus prudent scientific estimates of

the Earth’s probable long-term carrying sustainable carrying capacity (perhaps no more than 2 to 3 billion at a “modest” first-world standard of living).

This presentation provides an opportunity for Smail to comment further on global demographic developments and to broaden his basic argument by incorporating other critically important global concerns such as the profound ecological, economic, political, sociocultural and moral challenges we face during the next 50 years.

Smail will argue that a powerful emergent phenomenon has become increasingly likely, namely the growing potential for a global “synchronous failure” stimulated by the convergence of multiple “inconvenient truths.” Chief among these “truths” are: unsustainable population growth; the imminent peaking of fossil energy resources; increasing climatic instability; and political destabilization and social disruption by various “non-state” actors.

Bio-sketch: Smail, who earned a PhD from Yale University in 1976, is emeritus professor of anthropology at Kenyon College. His teaching and scholarly interests have focused primarily on physical anthropology and human evolutionary biology. During the past 15 years, his neo-Malthusian perspective on the growing “disconnect” between ongoing global population growth and the Earth’s long-term sustainable carrying capacity has been widely published in academic journals including *The American Journal of Physical Anthropology*, *Population and Environment*, *Politics and the Life Sciences*, *Environment, Development and Sustainability* and *World-Watch* magazine.

PART 3: Closing Remarks

3 p.m.

(Prerecorded, 30 min.)

Presenter: Jessica Pierce, PhD, bioethicist, Longmont, Colo.

Topic: Sustainable Health: An Exploration of the Moral Terrain

Summary: Health care systems in the U.S. and other industrialized countries are unsustainable. The industrialized health juggernaut is too large in scale, too expensive, too resource-intensive, too dependent on fossil fuels, too polluting, and too focused on high-tech tertiary interventions at the expense of public health and prevention.

Unsustainable health poses numerous practical and moral challenges. Pierce will focus on the moral dimensions of this crisis. She will briefly characterize the field of bioethics, focusing on how bioethics veered away from its original environmental agenda and why it needs



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to return to these roots.

The core values that have dominated the discussion of ethics in health care (beneficence, do no harm, respect for autonomy and justice) need to evolve, and new values must become part of the vocabulary of health care professionals, patients and academics. These new values include sustainability, modesty, restraint, compassion, cautious action and reverence for all life.

She'll conclude with a discussion of some specific ethical tensions posed by sustainable health.

Bio-sketch: Pierce is a bioethicist who has published extensively on sustainability and environmental responsibility in health care. She lives in Longmont, Colo., in the foothills of the Rocky Mountains.

3:30 p.m.

(Live, The Ohio State University)

Presenter: Mac Crawford, PhD, assistant professor, OSU College of Public Health's Division of Environmental Health Sciences, Columbus, Ohio

Topic: The Public Health Response to the Converging Crises of Peak Oil, Climate Change, Water Shortages and Population Growth

Summary: Evidence has been accumulating for several years now that the world has reached, or will reach very soon, the maximum rate of extraction of conventional petroleum. This phenomenon is colloquially referred to as "peak oil."

The continued and increasing mining and burning of fossil fuels has altered the world's carbon cycle in such a way that CO₂ levels have surpassed 350 parts per million, a level thought to be a threshold beyond which prevention of severe climate disruption is improbable or impossible (actually we've passed 385 ppm). This imbalance also affects rainfall, snowfall, glacial meltwater availability, and, when considered alongside unsustainable mining of fossil water (aquifers), water shortages threaten large population centers, as well as hamper efforts to feed 6.6 billion people.

The underlying force for these imbalances is a human population, and parallel livestock populations we raise, that is projected to grow to more than 9 billion by 2050.

In an article in the March issue of the *American Journal of Public Health*, Dr. Howard Frumkin argues that, "Primary prevention corresponds to *mitigation* efforts to slow, stabilize or reverse climate change by reducing greenhouse gas emissions."

Crawford argues that we are beyond the possibility of true primary prevention, having already unleashed the carbon; but if we apply



the concepts of public health prevention to these problems, the first effort toward Frumkin's primary prevention should be *conservation*.

To this end, public health intervention research can be geared toward exploring effective ways to elicit broad, population-wide, changes in behaviors and attitudes that result in reductions in fossil fuel use, not just carbon emissions.

The models of Everett Rogers (diffusion of innovation), and James Prochaska and Carlo DiClemente (stages of change) may provide the theoretical foundations for implementing these interventions and effecting measurable change in the behavior of Americans and other profligate wasters of fossil fuels, water and other resources.

Bio-sketch: Crawford has been involved in the health field for 30 years, first as a certified emergency medical technician, then registered nurse. He received an MS and PhD in preventive medicine from The Ohio State University, and has managed NIOSH- and USEPA-funded projects investigating injuries among farm youth and studying the neurological effects of maternal organophosphate insecticide exposures on infants and toddlers.

Crawford served as adjunct assistant professor in the Division of Epidemiology in the OSU School of Public Health between 1999 and 2003, and began a tenure-track position as an assistant professor at OSU in the College of Public Health, Division of Environmental Health Sciences in July, 2003. His work continues to focus on occupational and environmental epidemiology, having recently completed studies of exposure and health outcomes among firefighters, emergency medical technicians and healthcare workers.

His interests in public health preparedness have led him to an integration of the study of the health of first responders; issues of sustainability, such as climate change, and energy and water shortages; and issues surrounding public health workforce development and training.

He recently received OSU Targeted Investment in Excellence funding for a pilot project to develop and test novel public health training and exercise simulation methods. Dr. Crawford teaches courses in occupational health, exposure assessment, and also courses related to public health preparedness.

3:45 p.m.

(Live, The Ohio State University)

Presenter: Dan Bednarz, PhD, consultant

Topic: Summing Up: Abandoning Silos.

Summary: Few in public health disagree that the field suffers from a compartmentalization—"Silo-effect"—on research and practice activities. It is clear that this phenomenon hampers the ability of the discipline to both recognize and respond to the interconnected challenges articulated in this teach-in. Since research and practice agendas ultimately are determined by funding, this often results in the failure to act on unprecedented, yet critical threats. Moreover, the environmental threats outlined in this teach-in are not merely to population-level health, they place at risk the viability of the systems that deliver, protect and ensure health care and public health.

Bio-sketch: Bednarz is building a consortium among public health and health care stakeholders and actors to address the environmental crises now unfolding. He has worked in academic public health; lectured at the university level in business strategy, organizational studies, sociology, and policy analysis; worked as a craftsman; and also instructed English in East Berlin after the unification of Germany. He has written extensively on preventive and treatment medicine in a post-petroleum world and on the need to view energy, climate change, water, food, and so on as aspects of the same molar problem of humanity's conception of its place in the order of things.

