A WORLD OF HEALTH: CONNECTING PEOPLE, PLACE AND PLANET
## CONTENTS

**SESSION 1 — REDEFINING HEALTH** .................................................. 9
- The Diagnosis of the Unknown Physician by Carolyn Raffensperger .......... 11
- Beyond the Patient by Lee Thirer .................................................. 12
- The Coming Age of Ecological Medicine by Kenny Ausubel .................... 14
- The Rabies Principle by Sandra Steingraber ................................... 17

**SESSION 2 — EATING WELL** ...................................................... 19
- Weekly EcoChallenge: Eating BPA-Free Meals .................................... 20
- Buying Organic: Some Points to Consider by Julie Deardorff .................... 21
- Pesticide Drift by Rebecca Clarren ............................................. 23
- The Myth of the BPA-Free Diet by Kat Kerlin .................................. 26
- Excerpt from Cheap Eats by Ellen Ruppell Shell ................................ 30
- The Only Way to Have a Cow by Bill McKibben ................................ 32
- Video: Teach Every Child About Food with Jamie Oliver ..................... 33

**SESSION 3 — CLEANING HOUSE** ............................................... 35
- Weekly EcoChallenge: Detoxing Your Home ..................................... 36
- How to Keep Your Family Safe from Toxic Chemicals by Virginia Sole-Smith .................................................. 37
- Nine Ways to Avoid Household Toxins by Christina Gillham .................. 40
- Bridging the Divide: It’s not only about Taste by Carolyn Butler .......... 42
- The Dark Side of Lawns by Beth Huxta ........................................ 44
- Excerpt from Chasing Molecules by Elizabeth Grossman ..................... 47
- Activity: Healthy Home Assessment .............................................. 48

**SESSION 4 — BUILDING HEALTHY COMMUNITIES** .................... 51
- Weekly EcoChallenge: Driving Less ............................................ 52
- Activity: Creating an Accessibility Map ......................................... 53
- Environmental Amnesia by Sandra Steingraber ................................ 53
- Our Chemical Legacy by Stacy Malkan ........................................ 54
- Excerpt from Big Box Swindle by Stacy Mitchell ............................... 55
- At Risk: High-Traffic Areas... by Eric Nagourney ................................ 58
- Why Bikes are a Sustainable Wonder by John C. Ryan ...................... 59
- Leave No Child Inside by Richard Louv ........................................ 60

**SESSION 5 — CURING CONSUMPTION** .................................... 65
- Weekly EcoChallenge: Buying Less ............................................. 66
- Video: The Story of Stuff with Annie Leonard .................................... 67
- The Rise and Fall of Consumer Culture by Eric Assadourian ................. 67
- Simplicity and Consumption by Duane Elgin .................................... 70
- The Plastic Killing Fields by Amanda Woods .................................... 71
- A Cure for Consumption by Juliet Schor ........................................ 73
- e-Waste: where does it go? by NWEI staff ..................................... 75
- One Approach to Sustainability: Work Less by John de Graaf ............... 76

**SESSION 6 — HEALTHY PLANET/HEALTHY SELF** ....................... 79
- Weekly EcoChallenge: Saving Energy ........................................... 80
- Think Like an Ocean by Andi McDaniel ........................................ 81
- Embedded in Nature: Human Health and Biodiversity by Eric Chivian and Aaron S. Bernstein .................................................. 82
- Climate Change and Health Vulnerabilities by Juan Almendares and Paul R. Epstein .................................................. 83
- Restoring Nature, Restoring Yourself by Francesca Lyman .................. 85
- 3 Bets by Sandra Steingraber .................................................... 86
- Excerpt from Hunting for Hope by Scott Russell Sanders .................... 90

**CALL TO ACTION** ........................................................................... 93
**PERMISSIONS** ............................................................................. 94
**MEMBERSHIP** ............................................................................. 95
Thank you for participating in a Northwest Earth Institute discussion course. The Northwest Earth Institute is a non-profit organization working to inspire people to take responsibility for Earth through transformative small group dialogue. Since 1993 over 110,000 participants throughout North America have gathered in groups to explore the critical issues of our times through dialogue with others.

Recently, there has been considerable attention and debate around the topic of health, much of it focused on issues of access and coverage. We hope to broaden that conversation by bringing together people like you, to consider what “good health” really means and how we, both individually and collectively, can enjoy it.

The course begins by examining the roots of Western medicine and how it has evolved in an industrial society. It then progresses through the places where our personal health intersects with the environment — from our food and homes, to our communities and society, and finally, to our planet. At each stage we find individual actions that promote good health and in turn promote a healthier environment. These positive changes reinforce one another, since a healthier environment is a fundamental condition for sustaining human health and well-being, as well as the health of all the other species with whom we share our planet.

The course consists of six sessions, designed for group discussion. Sessions include readings, video clips, short assignments and group discussion questions. To help connect the session themes to actions you can take, you will also find a weekly EcoChallenge, a What You Can Do list, and a list of Further Readings and Resources. Please plan on spending about an hour to prepare for each meeting.

As you gather with your discussion group, we invite you to bring your own experience, critical thinking and ideas to the process. The readings are intended to invoke meaningful conversation and inspire action. We hope you will come away from this experience with an increased awareness of the connections between health and the environment and actions that you can take to promote health for your loved ones and for the Earth.

If you wish to learn more about the Northwest Earth Institute, please visit our website at www.nwei.org and sign up to receive NWEI’s email updates. To support the sharing of this work with others, become a member of NWEI by making a donation at www.nwei.org/join or by completing the membership form on page 95. You may also join by contacting our office at (503) 227-2807.

The Northwest Earth Institute currently offers the following discussion courses:
• Choices for Sustainable Living
• Voluntary Simplicity
• Menu for the Future
• Global Warming, Changing CO₂urse
• Sustainable Systems at Work
• Reconnecting with Earth
• Healthy Children, Healthy Planet
• Discovering a Sense of Place

Special thanks to the generous individuals who made this course possible by making donations to “sponsor a page” of this discussion course book. Donor inscriptions are noted at the bottom of the pages throughout this book.

Health must be one of life's greatest joys, as no other joy is possible without it.

— Anonymous
Tips for Implementing
A World of Health:
Connecting People, Place and Planet

Thank you for your interest in the programs offered by the Northwest Earth Institute. The following tips serve as a guide as you prepare to implement A World of Health: Connecting People, Place and Planet in your organization or community. While this discussion guide has tremendous stand-alone value, please keep in mind it was designed to be used with others in a group dialogue setting. The following suggestions are based on NWEI’s experience with facilitating small group programs since 1993.

1. The ideal group size is 8-12 participants. This ensures that each member will be able to actively participate in each discussion.
2. Host an introductory orientation meeting for participants in order to share information about the course and course process. Invite people to sign up (if participation is not required).
3. Describe the group process. One of the key benefits of participation in NWEI programs is that participants have the opportunity to facilitate sessions on a rotating basis. Most groups meet for an hour and a half for each meeting. Each session will be led by a volunteer facilitator from the group.
4. Point out the “Guidelines for the Weekly Facilitator” found on page 6. Note that NWEI programs are designed to encourage discussions inspiring behavior change. Consensus regarding content found in the articles is not the goal. Be sure to explain the role of the facilitator, using the next page as a reference point.
5. Ensure that participants have signed up for the opening and facilitating roles (using the Course Schedule form below).
6. Follow the format presented throughout the course book. Begin each session with a brief opening (described on page 6), followed by the Circle Question (provided in each session), then follow with the other discussion questions provided in each session.

You will receive the most benefit from this course if you complete all assignments and participate in each of the group discussions. If you have questions along the way, please don’t hesitate to contact our support team at 503-227-2807 or email contact@nwei.org.

We trust your course experience will be of value and we appreciate your commitment to creating a more healthy future.

---

**COURSE SCHEDULE FOR A WORLD OF HEALTH: CONNECTING PEOPLE, PLACE AND PLANET**

This course schedule may be useful to keep track of meeting dates and of when you will be facilitating or providing the opening.

<table>
<thead>
<tr>
<th>CLASS SESSION</th>
<th>DATE</th>
<th>OPENING</th>
<th>FACILITATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redefining Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating Well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning House</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Healthy Communities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curing Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy Planet, Healthy Self</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---
GUIDELINES
FOR FACILITATING AND OPENING

For each session of this course, one participant facilitates the discussion and one participant leads the “opening.” The roles rotate each week with a different group member offering an opening and another member facilitating. This process is at the core of the Earth Institute culture — it assumes we gain our greatest insights through self-discovery and peer learning.

✦✦✦

FOR THE SESSION FACILITATOR

As facilitator for one session, your role is to stimulate and moderate the discussion. You do not need to be an expert or the most knowledgeable person about the topic.

Your role is to:
• Remind the designated person ahead of time to bring an opening.
• Begin and end on time.
• Feel free to ask the questions included in each chapter, any of the following general questions, or your own:
  – Did you have a strong reaction to any of the articles in this session?
  – What surprised you the most in this session?
  – Did you learn any new information or gain new insights from this session?
  – Do the materials in this session inspire any changes in your daily life?
• Make sure your group has time to respond to the action-oriented discussion questions about the Weekly EcoChallenge — it is a positive way to end each gathering.
• Keep discussion focused on the session’s topic. A delicate balance is best — don’t force the group into the questions, but don’t allow the discussion to drift too far.
• Manage the group process, using the guidelines below:
  A primary goal is for everyone to participate and to learn from themselves and each other. Draw out quiet participants by creating an opportunity for each person to contribute. Don’t let one or two people dominate the discussion. Thank them for their opinions and then ask another person to share.

Be an active listener. You need to hear and understand what people say if you are to guide the discussion effectively. Model this for others.

The focus should be on personal reactions to the readings and ideas for taking action. The course is not for judging others’ responses or problem solving. Consensus is not a goal.

FOR THE SESSION OPENING

• Bring a short opening, not more than five minutes. It should be something that expresses your personal appreciation for the natural world. Examples: a short personal story, an object or photograph that has special meaning, a poem, a visual, etc. Be creative.

• The purpose of the opening is twofold. First, it provides a transition from other activities of the day into the group discussion. Second, since the opening is personal, it allows the group to get better acquainted with you. This aspect of the course can be very rewarding.

For more information on the NWEI course model and organizing a course, see “Tips for Implementing A World of Health: Connecting People, Place and Planet” on page 5.
EVALUATION

Optional contact information:
Name
Address
Phone___________________________________________E-mail

☐ Please add me to your e-newsletter list.

PART 1. PLEASE FILL OUT WEEKLY, while your thoughts and opinions are fresh in your mind. We suggest removing this page to use as a bookmark as you read through the course. Rate the six sessions. If you prefer to submit this online, go to www.nwei.org/evaluation.

<table>
<thead>
<tr>
<th></th>
<th>POOR CHOICE</th>
<th>EXCELLENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Redefining Health</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. Eating Well</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Cleaning House</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Building Healthy Communities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Curing Consumption</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. Healthy Planet, Healthy Self</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Were the following materials helpful? Circle “Y” if we should use the material next time or “N” if we should replace it instead.

COMMENTS:

1. “The Diagnosis of the Unknown Physician” .......... Y   N
   “Beyond the Patient” .............................................. Y   N
   “The Coming Age of Ecological Medicine” ................ Y   N
   “The Rabies Principle” ......................................... Y   N

2. Weekly EcoChallenge: Eating BPA-Free Meals .......... Y   N
   “Buying Organic: Some Points to Consider” ........... Y   N
   “Pesticide Drift” ................................................. Y   N
   “The Myth of the BPA-Free Diet” ......................... Y   N
   Excerpt from Cheap Eats ........................................ Y   N
   “The Only Way to have a Cow” ............................ Y   N
   Video: “Teach Every Child About Food” ................ Y   N

3. Weekly EcoChallenge: Detoxing Your Home .......... Y   N
   “How to Keep Your Family Safe from Toxic Chemicals” .... Y   N
   “Nine Ways to Avoid Household Toxins” ................... Y   N
   “Bridging the Divide: It’s Not Only About Taste” ....... Y   N
   “The Dark Side of Lawns” ...................................... Y   N
   Excerpt from Chasing Molecules ............................ Y   N
   Healthy Home Assessment ..................................... Y   N

Evaluation
4. Weekly EcoChallenge: Driving Less .............................................. Y N
   Creating an Accessibility Map ............................................... Y N
   “Environmental Amnesia” .................................................... Y N
   “Our Chemical Legacy” ....................................................... Y N
   “At Risk: High-Traffic Areas” .............................................. Y N
   Excerpt from Big Box Swindle .............................................. Y N
   “Why Bikes are a Sustainable Wonder” .................................. Y N
   “Leave No Child Inside” ....................................................... Y N

5. Weekly EcoChallenge: Buying Less ............................................. Y N
   Video: “The Rise and Fall of Consumer Cultures” ..................... Y N
   “Simplicity and Consumption” .............................................. Y N
   “The Plastic Killing Fields” ................................................... Y N
   “e-Waste: Where Does It Go” .............................................. Y N
   “A Cure for Consumption” .................................................... Y N
   “One Approach to Sustainability: Work Less” ........................ Y N

6. Weekly EcoChallenge: Saving Energy ......................................... Y N
   “Think Like an Ocean” ........................................................... Y N
   “Embedded in Nature: Human Health and Biodiversity” ........... Y N
   “Climate Change and Health Vulnerabilities” ............................ Y N
   “Restoring Nature, Restoring Yourself” .................................. Y N
   “3 Bets” .............................................................................. Y N
   Excerpt from Hunting for Hope .............................................. Y N

If a NWEI representative has been involved in your course, he or she will collect evaluations at the final session. If not, please send your completed evaluation to NWEI, 107 SE Washington, Suite 235, Portland, OR 97214.

PART 2. PLEASE COMPLETE AT END OF COURSE.

Has the course made an impact on you? Yes No Please describe how. ________________________________________________________________

________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________

Please list other articles or books that should be included in the course. Identify URLs or chapter(s)/page(s) and the session where they should be included. ________________________________________________________________

________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________

Were the session activities and Weekly EcoChallenges beneficial? Why or why not? ________________________________________________________________

________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________

What has been the most valuable aspect of this course? ________________________________________________________________

________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________

Evaluation
REDEFINING HEALTH

Good health lies in recognizing that each of us is part of a wider web of life. When the web is healthy, we are more likely to be healthy… Just as the knee bone is connected to the thigh bone, humans and environmental health are inseparable.

— Kenny Ausubel, founder of Bioneers

SESSION GOALS

• To examine our personal beliefs and attitudes about health
• To examine modern medicine’s approach to health and the environment
• To explore the tenets of ecological medicine
• To become familiar with the precautionary principle

SESSION BACKGROUND

Good health is something we all strive for, but what do we really mean when we talk about it, and how might we go about creating the conditions that foster it? This session explores how we define health and how that understanding informs our individual and collective well-being. The readings included here propose a fundamental shift from the current perspective to a more integrated view of health; that is to say, one that understands health as a dynamic relationship between humans and the environments they live within.

In the first reading, "The Diagnosis of the Unknown Physician," environmental lawyer, Carolyn Raffensperger, offers several definitions of health, as well as her own prescription for addressing the health issues of the 21st Century.

In the next reading, "Beyond the Patient," Lee Thirer traces the roots of modern medicine back to Hippocrates’ treatise On Airs, Waters, and Places, noting its emphasis on ecology. Thirer describes a growing number of practitioners who, recognizing how far modern medicine has strayed from this ecological view, have become part of an "ecological medicine" movement. Kenny Ausubel explores this idea further in "The Coming Age of Ecological Medicine." He introduces the precautionary principle as a primary tool of ecological medicine, a concept which is illustrated in the final reading, "The Rabies Principle," by Sandra Steingraber.
To what extent do you believe that environmental factors contribute to health problems?

Circle questions should move quickly — each member responds briefly without questions or comments from others. Facilitator guidelines are on page 6.

SUGGESTED DISCUSSION QUESTIONS
1. In the first reading, Carolyn Raffensperger offers several definitions of health. Which resonates with you the most? Explain.

2. In your opinion, is the Hippocratic Oath still paramount today?

3. What would your ideal doctor’s appointment look like? Would you go to a physician who practiced “ecological medicine” if one was available to you? Why or why not?

4. In "The Coming Age of Ecological Medicine," Kenny Ausubel describes some of the medical-waste problems associated with current medical practices. Can you think of more ecologically sound practices that your health care practitioners could adopt?

5. Why aren’t environmental issues addressed in most medical schools? Should they be?

6. Which makes more sense to you, the European adoption of the precautionary principle or the American inclination to assume that something is safe unless proven to be harmful?

7. When is the current “risk paradigm” acceptable and unacceptable to you? Where do you draw the line?

8. Kenny Ausubel describes how some governments support sustainable practices, such as a taxes on pesticides, or paying farmers to grow organically in watersheds. What would it take to do that in the United States?

9. Sandra Steingraber provides reasons why public health officials treat rabies differently than environmental pollutants known to be harmful to our health. Which of her reasons sounds most compelling to you?

Weekly EcoChallenge
In the next five sessions, look here for your group’s Weekly EcoChallenge. The challenges are tied to the session themes, providing an opportunity to put your learning into action. A week before each meeting, be sure to see what the suggested action is and determine a realistic but challenging way to incorporate it into your life for a week. At the next meeting you will have an opportunity to share your struggles and successes with your group.

To find out more about NWEI’s annual EcoChallenge event, visit www.ecochallenge.org.

SUGGESTED READINGS AND RESOURCES
ORGANIZATIONS
Silent Spring Institute: researches the link between the chemicals and toxins that have made their way into our environment and breast cancer. www.silentspring.org
Science and Environmental Health Network has been the leading proponent in the United States of the Precautionary Principle as a new basis for environmental and public health policy. www.sehn.org

ARTICLES
Please go to the Northwest Earth Institute website (www.nwei.org) for the most current list of articles relating to this session.

BOOKS
Alternative Medicine: The Definitive Guide (2nd Edition) by Burton Goldberg, John W. Andersen and Larry Triviera. Four hundred of the world’s leading alternative physicians have contributed safe, affordable, and effective remedies for more than 200 medical conditions ranging from common health problems like allergies, asthma, and obesity to serious illnesses like cancer, heart disease, and AIDS.

FILMS/DOCUMENTARIES
Living Downstream is a documentary based on the acclaimed book by ecologist Sandra Steingraber. The film follows Steingraber during one pivotal year as she travels across North America, working to break the silence about cancer and its environmental links.
THE DIAGNOSIS OF THE UNKNOWN PHYSICIAN

By Carolyn Raffensperger

According to an old story told by Sun Tzu at the beginning of The Art of War, a lord of ancient China once asked his physician, a member of a family of healers, which family member was the most skilled at medicine. The famous physician replied, “My eldest brother is the most skilled since he sees the spirit of sickness and removes it before it takes shape, so his name does not get out of the house. My elder brother cures sickness when it is still extremely minute, so his name does not get out of the neighborhood.” The greatest physician was unknown because he prevented disease rather than having to cure it.

✦✦✦

I have the remarkable fortune of having great genes. Both my parents are alive, well and unusually rascally for Midwesterners. My Dad was in his late 60s when he sailed across the Atlantic and back. He published a novel last year under a pseudonym (so don’t look for it using my name) and regularly paddles out into the ocean in his homemade sea kayak. My Mom was in her mid-70s when she got a new job on the upper Peninsula of Michigan, moved into a log cabin and took up snow-shoeing and nature photography. They have no history of cancer, diabetes, or cardio-vascular problems. Alas, my parents’ medical histories aren’t going to be much help in predicting what I will live with as I age and what I will die of. All the trends in things like cancer, Alzheimer’s, diabetes, and Parkinson’s suggest that I along with my age cohort are going to be sicker longer and die after lingering, debilitating illnesses.

What’s going on? Basically our diseases are corollaries of our civilization. As Rene Dubos said, “each type of society has diseases peculiar to itself — indeed, … each civilization creates its own diseases.” Our bodies reflect the interaction of our genes with the manifestations of our civilization — the built, social and natural environments. In fifty years we’ve fundamentally altered all of these systems. We get less exercise, we eat nutritionally-suspect food and we’ve filled our world with toxic chemicals. … Where are we headed given this trajectory? Here are my four predictions on the future of human health.

1) We will see more chronic diseases such as asthma, diabetes, and Alzheimer’s. The reason is that we have a whole long list of stressors like nutritionally deficient diets, inadequate exercise, and air pollution, all of which lead to oxidative stress and inflammation — the biological mechanisms for disease.

2) Diseases that make people fundamentally anti-social will affect a much larger population. These illnesses include autism, Alzheimer’s, and mental illness. These diseases are rising now in the population and render people unable to function within their families and communities.

3) We will suffer from an increased number of rapidly changing infectious, zoonotic pandemics (think swine flu, bird flu, hemorrhagic viruses,) because climate change,
modern transportation, and industrial agriculture are disrupting ecologies, setting up the conditions for rapidly evolving bacteria, funguses and bacteria that use multiple species as hosts. In addition, we are moving people and stuff around the planet at an ever increasing rate. Infectious agents are hitching rides and zipping around the planet in cargo ships and airplanes.

4) Subtle, difficult to diagnose malaises like chronic fatigue, fibromyalgia, and suppressed immune systems will become the norm. Patients will exhibit multi-factorial, complex symptoms that defy categorization.

If we wanted to alter this course, where would we start? We'd start with decent definitions of health because how we define it determines how we maintain health and cure disease.

Wendell Berry defines health as membership — membership in the community of humans and membership in the Earth community. “Can our present medical industry produce an adequate definition of health? My own guess is that it cannot do so. Like industrial agriculture, industrial medicine has depended increasingly on specialist methodology, mechanical technology, and chemicals; thus, its point of reference has become more and more its own technical prowess and less and less the health of creatures and habitats.” Berry later says, “this, plainly, is a view of health that is severely reductive. It is, to begin with, almost fanatically individualistic. The body is seen as a defective or potentially defective machine, singular, solitary, and displaced, without love, solace, or pleasure. Its health excludes unhealthy cigarettes but does not exclude unhealthy food, water, and air. One may presumably be healthy in a disintegrated family or community or in a destroyed or poisoned ecosystem.”

A related definition to Berry’s idea of membership comes from Aldo Leopold who defined health as the capacity for self-renewal. Leopold was referring to land but it applies equally well to the individual. Leopold means that health is an intrinsic and internal biological process, not a static quality. It is the process of re-membering our communities.

Sun Tzu’s unknown physician must have been working with similar definitions of health in order to prevent the diseases of his day. Today, I imagine he would write a prescription to restore the Earth’s resilience, and repair the social systems to alleviate the debilitating stresses of poverty, racism and hunger, and create built environments that nurtured living beings.

This article was posted on December 10, 2009, Science and Environmental Health Network webpage, www.sehn.org. Carolyn Raffensperger is executive director of the Science & Environmental Health Network, www.sehn.org. As an environmental lawyer she specializes in the fundamental changes in law and policy necessary for the protection and restoration of public health and the environment.

BEYOND THE PATIENT

By Lee Thirer

Before Hippocrates, health was a supernatural affair. Exorcists and priests charmed money from the dying. Snakes squirmed beneath sickbeds. Sacred dogs licked fatal wounds. Pilgrims dozed within shrines, awaiting divine visitations, and dreamed of magical cures at places like the temple hill at Cos, where the mastermind of Western medicine — born on the island around 460 BC — rooted his revolution in ecology. Though few who now benefit from modern medicine remember, its creator overthrew the order of the gods with one simple mandate: that the physician seek truth only in the natural world, in the study of air, water, soil, and climate — in the study of the body within its ecosystem.

“But these things,” Hippocrates commanded in his treatise On Airs, Waters, and Places, “he must proceed to investigate everything else.”

Hippocrates taught that nature was the doctor, the doctor its aide. Studying the interchange of the internal and the external, a Hippocratic healer paid careful attention to food, exercise, and the ways the waters and the climates acted on the four humors — blood, phlegm, and yellow and black biles, each associated with a particular temperament. By trusting and helping nature, the great healer, to maintain health, Hippocrates’ students sought to provide preventive care over a lifetime. Only after nature had begun to fail would the doctor prescribe treatments that would, in Hippocrates’ words, “help, or at least do no harm.”

For the first time in millennia, however, nature itself is so unwell that doctors cannot fulfill their ancient duties. Twenty-six centuries of medical innovations cannot now protect the patient from the wider world, with its modern
stresses and toxicity. And even if they could, modern doctors are focused elsewhere. “We shouldn’t pretend that clinical medicine is really doing primary prevention,” says Ted Schettler, science director of the non-profit Science and Environmental Health Network, “because it’s not — and it’s not particularly interested in it.”

Recognizing these shortcomings, a network of doctors, nurses, and other health practitioners, loosely affiliated in an “ecological medicine” movement, have begun not only to re-emphasize prevention but also to adopt a broader definition of preventive care.

“Our focus has always been on taking care of the immediate patient in front of us,” says Calista Hunter, an internist in Lafayette, California. “That’s all we really focus on. My hope is that physicians, as they become more environmentally aware, will realize that they can help a lot more people by addressing environmental issues that influence their patients.”

Hunter serves on the board of the Berkeley-based Teleosis Institute, one of a half-dozen U.S. nonprofits devoted to ecological medicine. Teleosis has two main goals: preventing the environmental causes of harm and stopping health care itself from contributing to them.

“We’re doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.

“We're doing continuing medical education lectures at a lot of local hospitals,” says Hunter. “And I have found that every time I talk to a physician about environmental issues related to their specialty, people are responsive.” Each specialist knows of some discrete environmental source of illness, Hunter says — an ear, nose, and throat doctor may bring up concerns about noise pollution; an oncologist may talk about disposal of medications in hospice care.

Casual disposal of medication is a major target for proponents of ecological medicine. When a hospice patient dies, weeks’ worth of medicines are often flushed down the toilet and into the watershed, joining various other toxic health-care byproducts and excreted pharmaceuticals. A 2006 study in the journal Environmental Science and Technology found that a mixture of thirteen such substances inhibits the growth of human embryonic cells at environmental-exposure levels. Studies have also linked estrogen-related pharmaceutical waste to endocrine disruption in animals, including feminization of male fish. In 2001, the U.S. Geological Survey reported finding medicines in every one of eighty waterways tested nationwide.

“Medications have to go somewhere after people take them and excrete them,” explains Sue Stone, a family physician based in Fresno, California. “The chemical byproducts seep back into the environment and it just adds to the chemical load.”

Those byproducts are clear testaments to the fact that there is no “away” — that the external is the internal and that interconnectedness is a profound biological truth.
conscientious agriculture, nourishing nature so nature will nourish patients.

This collaboration is an example of what Schettler calls a “new ecology of institutions.” But it will be hard-pressed to make much headway as long as the economy is propelled by a pre-Hippocratic assumption: that the primary purpose of medicine is to cure diseases. The medical sector currently accounts for more than 16 percent of the gross domestic product and is expected to grow to 20 percent in the next decade. And there are those, says Schettler, who want to see it grow further still. But the fundamental twenty-first-century choice, as he sees it — between health care and disease care — will hinge on acceptance of an ethical mandate as old and vital as medicine itself: “As we decide how to live in the world, what to do, and how to make changes, first — do no harm.”

Published in the March/April 2007 issue of Orion magazine. Lee Thirer is a freelance writer living in the San Francisco Bay Area.

THE COMING AGE OF ECOLOGICAL MEDICINE

By Kenny Ausubel

Among the many immigrants who arrived in New York City in the summer of 1999, none made a name for itself more quickly than West Nile fever. Traced to a virus spread by mosquitoes, the disease had never been seen in this country, or even in the Western Hemisphere. It first struck birds, then people, killing seven and sickening dozens more.

The city hoped to control it by killing the mosquitoes with malathion, a pesticide chemically related to nerve gas. Though many protested, Mayor Rudolph Giuliani insisted the spraying was perfectly safe.

Within months, scientists at the U.S. Environmental Protection Agency were debating just how wrong the mayor had been. The EPA was on the verge of declaring malathion a “likely” human carcinogen when its manufacturer protested. The EPA backed off, saying malathion posed no documented threat, though some in the agency continued to insist the dangers were being downplayed. More suspicion was raised upon news of a massive die-off among lobsters in Long Island Sound near New York. Malathion is known to kill lobsters and other marine life, but officials denied the connection.

Though no direct causal link can yet be drawn, some infectious-disease experts say anomalous outbreaks such as West Nile may be tied to human impacts on the environment, including climate change and the destruction of natural habitats. As noted by Dr. Paul R. Epstein, associate director of the Center for Health and the Global Environment at Harvard Medical School, “West Nile is getting veterinarians and doctors and biologists to sit down at the same table.” What they are unraveling is a complex knot linking human health and the state of the natural world.

Welcome to a preview of the health issues awaiting us in the 21st century. Indeed, we’re already living at a time when vast social and biological forces are interacting in complex ways — and with unpredictable impacts. War, famine, and ecological damage have caused great human disruptions, which in turn have transformed tuberculosis, AIDS, and other modern plagues into global pandemics.

Even more disturbing, many of our efforts to fight disease today are themselves symptoms of a deeper illness. Spraying an urban area with a substance whose health effects remain unknown is one glaring example, but there are many others. Think of certain compounds used in chemotherapy that more often kill than cure. Or the 100,000 people who die in hospitals every year from drugs that are properly prescribed. Or the many IV bags and other plastic medical products that release dioxin into the air when they are burned.

That last example contributes to perhaps the most heartbreaking metaphor of our environmental abuse and its unforeseen consequences — the discovery that human mother’s milk is among the most toxic human foods, laced with dioxin, a confirmed carcinogen, and other chemical contaminants. All these cases suggest our culture’s deep dependence on synthetic chemicals, and our long refusal to acknowledge how profoundly they’ve disrupted our ecological systems.
There's a widespread sense that mainstream medicine is blind to this reality, and is even part of the problem. This growing disillusion, coupled with the fact that high-tech medicine costs too much and often doesn't work, has led to a widespread public search for alternatives. One result is the rise of complementary medicine, which combines the best of modern health care with other approaches. Add the immense new interest in traditional healing methods, herbs, and other natural remedies and you get a sense of how much the health-care paradigm has changed over the past 30 years.

What I see happening is a deeper shift that all these approaches are edging us toward, even if we don't fully realize it yet. It's a new understanding of health and illness that has begun to move away from treating only the individual. Instead, good health lies in recognizing that each of us is part of a wider web of life. When the web is healthy, we are more likely to be healthy. But the environmental illnesses we see more and more of these days — rising cancer rates spring to mind — are constant reminders that the web is not healthy. How did we reach this tragic place? And more to the point, where do we go from here?

The first step toward a healthier future, I believe, lies in ecological medicine. Pioneered by a global movement of concerned scientists, doctors, and many others, ecological medicine is a loosely shared philosophy based on advancing public health by improving the environment. Its central idea is that industrial civilization has made a basic error in acting as if humans are apart from, rather than a part of, nature. Just as the knee bone is connected to the thigh bone, human and environmental health are inseparable.

And in a biosphere that is rampantly toxic and woefully depleted, a mounting number of our health problems can only be understood as part of a larger pattern. Ecological medicine could well emerge as a force for dramatic cultural change. It proposes to reshape how industrial civilization operates, in part by redefining the role that the public plays in making the decisions that affect all life on earth.

Simply stated, improving human health is inextricably linked to ecological well-being. The interconnectedness of all life is a fundamental biological truth. What's more, all life is under threat. There simply is no "elsewhere" to dump the hazardous by-products of industrial society. Eliminating them from our production systems is the only solution, and a well-informed public is crucial to realizing it. ...

Here are some basic tenets of ecological medicine:

• The first goal of medicine is to establish the conditions for health and wholeness, thus preventing disease and illness. The second goal is to cure.

• The earth is also the physician's client. The patient under the physician's care is one part of the earth.

• Humans are part of a local eco-system. Following the ecopsychological insight that a disturbed ecosystem can make people mentally ill, a disturbed ecosystem can surely make people physically ill.

• Medicine should not add to the illnesses of humans or the planet. Medical practices themselves should not damage other species or the ecosystem.

The main tool for putting these ideals into practice, ecological healers say, is what they call the precautionary principle. …The precautionary principle basically argues that science and industry must fully assess the impact of their activities before they impose them upon the public and the environment. Societies around the world have begun to incorporate some version of the principle into law, hoping to rein in bioengineering and other new technologies. That science should objectively prove the safety of its own inventions might seem like common sense, but that's not how most science operates today.

For decades, the scientific and medical community has accepted that a certain amount of pollution and disease is just the price we have to pay for modern life. This is called the "risk paradigm," and it essentially means that it is society's burden to prove that new technologies and industrial processes are harmful, usually one chemical or technology at a time. The risk paradigm assumes that there are "acceptable" levels of contamination the earth and our bodies can supposedly assimilate. …

There is a global effort afoot today to replace the risk paradigm with the precautionary principle, which is based on a recognition of science's limits in fully predicting consequences and possible harm. The precautionary principle acknowledges that all life is interconnected. It shifts the burden of proof (and liability) to the parties promoting potentially harmful technologies, and limits their use to experiments until they are proven truly safe.

The idea is not new — a version of it first appeared in U.S. law back in 1958 in the Delaney Amendment, which governed pesticide residues in food and set standards for environmental impact statements. Nor is it radical. At its essence, the principle harks back to grandma's admonitions that "an ounce of prevention is worth a pound of cure," that we're "better safe than sorry."

The model is already used, in theory, for the drug industry, which is legally bound to prove drugs safe and effective prior to their use. Critics call it anti-scientific; they say it limits trade and stifles innovation. Ecological medicine advocates disagree.

"The precautionary principle actually sheds a bright light on science," says Dr. Ted Schettler, science director of Science and Environmental Health Network (SEHN). "It doesn't tell us what to do, but it does tell you what to look at." Germany and Sweden have incorporated the principle into certain environmental policies. The United Nations Biosafety Protocol includes it as part of new guidelines for regulating trade in genetically modified products, its first
appearance in an international treaty.

As people and their governments face ever more complex scientific decisions, the precautionary principle can serve as what some have called an “insurance policy against our own ignorance.” After all, we can’t even predict next week’s weather or the economy a year out, much less the unfathomable complexity of living systems.

The Hippocratic oath tells doctors to “First, do no harm,” yet our medical practices often pose serious environmental threats. In 1994, for instance, the EPA reported that medical waste incinerators were the biggest source of dioxin air pollution in the United States. Dioxin finds its way into our food and accumulates in our fat; it’s been linked to neurological damage in fetuses. Even a simple thermometer contains mercury, another potentially deadly neurotoxin.

The medical-waste problem does not stop there. Along with generating radioactive waste from various treatments, the medical industry is now the source of a new peril: pharmaceutical pollution. Creatures living in lakes and rivers appear to be at special risk as antibiotics, estrogen, birth-control pills, painkillers, and other drugs find their way into the waste stream. Fish are already affected; intersex mutations (showing both male and female characteristics) have been reported in various species around the world. But humans are not immune. The war on drugs may soon take on a new meaning as entire populations are subjected to constant low doses of pharmaceuticals in the water supply.

Groups like Health Care Without Harm (www.noharm.org) have made it their mission to halt or curb such damaging medical practices, especially the use of mercury thermometers and the industry’s reliance on burning its waste…

Ecological medicine suggests first doing no harm to the environment, then going further, creating a medical practice that itself minimizes harm. Like virtually all earlier healing traditions, it emphasizes prevention, strengthening the organism and the environment to avoid illness in the first place. Ancient Chinese healers, for instance, expected compensation only if their clients remained well, not when they got sick.

But an ecological approach to healing also looks to deeper tenets embedded in nature and how it operates. Again, the new vision reveals itself to be in many ways an old one. It borrows from the insights of indigenous healing traditions, many of which are now being confirmed by modern science — including the fact that nature has an extraordinary and mysterious capacity for self-repair.

However resilient the biosphere may be, it’s crucial to understand that the planet’s basic life support systems are in serious decline. From climate change to plummeting biodiversity to gargantuan quantities of toxic wastes, the ecological stresses are reaching dangerous thresholds. Much of the damage can be traced to the 20th century’s three most destructive technologies: petrochemicals, nuclear energy, and genetic engineering. …

In addition to instructing healers first to do no harm, Hippocrates also instructed them in a lesser-known passage to “revere the healing force of nature.” For years, that’s been my quest: working with nature to heal nature. I founded the Bioneers Conference in 1990 to bring together people exploring ways of doing this — biological pioneers from many cultures and disciplines, and from all walks of life. All had peered deep into the heart of the earth’s own living systems to understand what we can learn from 3.8 billion years of evolution. Their common purpose was to heal the earth.

Their basic question: How would nature do it? They were all using their knowledge of living systems to devise solutions to our most pressing environmental and societal problems. I now realize these people are modern healers, too.

As their work repeatedly illustrates, we already have many of the technologies we need to retool our industrial system. Many of the bioneers show how we can replace existing industrial practices with sustainable alternatives that run on clean, renewable energy sources. Government has a role to play in this process too. Several years ago Sweden imposed a steep tax on pesticides, a measure that greatly reduced their use. Europe recently banned four antibiotics from animal feed. On the other side of the equation, governments are using tax subsidies to promote sustainable technologies such as chlorine-free paper production and organic farming. The city of Munich pays German farmers to grow organically in the watershed that supplies drinking water. …

The ethic of preventing harm as seen in both environmental protection and ecological medicine will continue to spread, but what about existing messes? Many treatment methods modeled on living systems have shown dramatic capacities for bioremediation — that is, for detoxifying land, air, and water.

Visionary biologist John Todd’s “living machines” mimic natural ecologies by utilizing bacteria, fungi, plants, fish, and mammals to purify water and industrial “wastes.” The work of mycologist Paul Stamets has shown that fungi can help digest diesel spills and even chemical and biological weapons components.

Similar success stories are found across many fields. By looking to the principles of ecological healing to restore the earth and ourselves, we create not only the conditions for individual health, but also the basis for healthy societies and robust economies.

By restoring the earth, we restore ourselves.

THE RABIES PRINCIPLE

By Sandra Steingraber

The finest description of the precautionary principle that I’ve ever heard came from David Gee of the European Environment Agency in a speech before a convocation of environmental ministers in Belgium. After arguing that benefit of the doubt should be granted to public health rather than to the things that threaten it, Gee said that precaution helps us avoid, during times of uncertainty, the construction of “pipelines of unstoppable consequences.” Gee’s remarks were met with stout applause.

On this side of the Atlantic, “precautionary principle” occupies the same rhetorical space as “socialized medicine.” They’re words best avoided in mixed company. Even the principle’s U.S. torchbearer, the Alliance for a Healthy Tomorrow, no longer uses the phrase in its name.

And yet, whatever you want to call a spade, the precautionary principle is already embedded in at least one corner of our environmental health system, as I learned when my children discovered a bat in their bedroom.

I had sent the kids upstairs to put on pajamas. When they reappeared, claiming an animal was under the bed, I pointed the way back to their room. “Pajamas. Now.”

Within minutes they were at my desk again. “Mama, we think you should come.” An electronic device of some kind was ringing. It occurred to me that we didn’t have any toys that sounded like that. The kids solemnly followed me upstairs. Piercing bleeps came from everywhere and nowhere all at once. Like a tape loop used to disorient the enemy. Like the ring tone from hell.

I ordered the kids out of the room, shut the door, and stuffed a towel under it.

In upstate New York, 2 percent of big brown bats are infected with rabies.

I knew that if I failed to capture this one, my son and daughter would be compelled to undergo rabies vaccinations, in accordance with Centers for Disease Control guidelines. Bats have razors for teeth. Their bites can be undetectable. And, although the odds are 98 percent that any given bat is rabies-free, rabies is a disease with a 100 percent fatality rate.

I squatted in front of the disassembled heating register and devised a plan. What I needed was a long-sleeved shirt, a yogurt container, and leather gloves. But these were all located in different parts of the house, and I didn’t want to leave my chirping intruder while I gathered the tools for its arrest. Through the door, I asked the seven year old to bring me the phone book. On the inside cover, alongside the numbers for the sheriff, fire department, and suicide counseling, was the after-hours number for the Rabies Prevention Hotline. I asked the four year old to bring me the phone. After two rings, a live person from the county health department answered. And with that phone call, a well-oiled public health apparatus swung into motion.

Within fifteen minutes, a wildlife removal specialist was standing next to me. Within another fifteen minutes the bat was inside a bucket in my freezer. By morning, its frozen corpse was in the hands of a pathologist. Twenty-four hours later, the head of the county’s rabies prevention program called me.

The bat was rabid.

I needed to come to county health for an immediate interview. During that conversation, I was asked if the children had been alone in the room with the bat. I learned that a four year old is on the cusp of what’s considered old enough to be a reliable narrator about whether direct contact has occurred. I was told that the decision to undergo the vaccination series was up to me. I was encouraged to decide swiftly. The initial shots needed to be given within seventy-two hours of exposure. The remaining four shots were given over twenty-eight days, according to

DRUGS IN OUR WATER: WHAT CAN I DO?

- Dispose of unused or unwanted medications at take-back sites
- Do NOT dispose of any medication down the toilet or in the trash
- Purchase drugs in small amounts, limiting expired medications
- Ask for medications with low environmental impact
- Encourage your health provider to take back unused and expired drugs
- Commit to health and wellness strategies to reduce your reliance on medications
- Choose meat and poultry raised without hormones and antibiotics

Source: Teleosis Institute, an educational nonprofit organization devoted to reducing the environmental impact of health care through sustainable medical practices. www.teleosis.org
Or even: Look, we don’t know if you have been exposed, but we are removing environmental carcinogens from your neighborhood because we want to err on the side of caution.

The difference between bladder cancer and rabies is not one of scientific certainty. We have as much evidence that arsenic, say, causes bladder cancer as that the rabies virus causes a fatal form of encephalitis. The difference between bladder cancer and rabies is one of what physicians call disease specificity. If I forgo a rabies vaccination and, weeks later, am sucked down the pipeline of unstoppable consequences, we’ll all know what killed me. If I go on to die of bladder cancer, we won’t know if it was the arsenic in the drinking water or exposure to some other carcinogen.

There are other differences between bats and chemical toxicants that help explain why our public health system takes a precautionary approach to one and a risk approach to the other. To look into the eyes of a rabid animal is to confront a visible danger. To watch your children climb a wood play structure — even knowing that the wood is suffused with leachable arsenic — is not. To remove bat roosts from one’s attic — as we have subsequently done — is met with silence on the part of the bats. To remove arsenic-treated play structures from one’s community nursery school — as I have attempted to do — is not met with silence by their manufacturers. Believe me.

Back at home, I conducted some interviews of my own. Faith claimed that she never saw the bat when she was alone in the room with it. She only heard it. Elijah gave me a different story — “The bat flew around and landed on my hand. It was carrying a tiny . . . GUN!” — and I learned why the CDC considers the bat reports of young children unreliable.

We had the shots. Our insurance company paid. And so my children and I were afforded 100 percent protection against an environmental disease we may or may not have been exposed to. And I could go back to work investigating environmental diseases — cancer, birth defects, asthma, learning disabilities — and their known and suspected contributors — pesticides, solvents, soot, heavy metals — to which we are all exposed but for which no emergency hotline numbers appear in our phone books and no animals bleat SOS signals from the walls of our homes.

Published in the September/October 2007 issue of Orion. www.orionmagazine.org. Sandra Steingraber is a biologist, author, and cancer survivor who currently makes her home in Ithaca, New York. Her most acclaimed work, Living Downstream, details the links between cancer and toxins in the environment.
EATING WELL

The interesting thing I learned was that if you’re really concerned about your health, the best decisions for your health turn out to be the best decisions for the farmer and the best decisions for the environment — and that there is no contradiction there.

— Michael Pollan, author, The Omnivore’s Dilemma

SESSION GOALS

• To examine the impact of the industrial food system on personal, collective and ecological health
• To explore the hidden costs of “cheap” food
• To examine the health impacts of food packaging
• To identify ways of reducing BPA in our diets

SESSION BACKGROUND

Most people agree that eating well is a foundation of good health. Yet many of our decisions are now focused on avoiding foods that might be harmful to ourselves and our planet. How did we arrive at this point where food, which sustains us, has become something to fear? Several of the readings in this session point to the industrial food system that has transformed the American diet and landscape over the last half century. The global food system has not only changed the eating habits of Americans, it has contributed to what many call a health crisis. The readings that follow provide insights into health issues stemming from the American diet, and offer alternatives to restore our bodies and our planet.

In “Buying Organic? Some Points to Consider,” Julie Deardroff lays out the basic differences between organic and conventional farming methods and their implications for our health and the environment. The impact of pesticides on those closest to them — farm workers and their families — is explored further in “Pesticide Drift” by Rebecca Clarren.

In “The Myth of the BPA-free diet,” Kat Kerlin describes the current debate around plastics in food packaging and her attempts to rid them from her diet. In an excerpt from Cheap: The High Price of Discount Culture, Ellen Ruppell Shell peels back layers of the global food system to uncover serious food safety concerns. In “The Only Way to Have a Cow,” Bill McKibben connects a meat-based diet to many Western health problems and to global climate change. Finally, celebrity chef Jamie Oliver takes his crusade against obesity and the American diet to West Virginia in a TED Talks video clip.
Circle Question

To what extent are you willing to change your diet to improve your health?

Environment health?

Circle questions should move quickly — each member responds briefly without questions or comments from others.
Facilitator guidelines are on page 6.

SUGGESTED DISCUSSION QUESTIONS

1. Based on the readings, are you changing your shopping list? What influences your shopping choices most: price, convenience, packaging, personal health, treatment of animals, environmental concerns?
2. What safety concerns, if any, do you have about the food you consume? What changes can you make? Explain.
3. How often do you think of farm workers’ health or the environment when you buy produce?
4. According to Bill McKibben, “industrial livestock production is essentially indefensible.” What’s your opinion?
5. Does the packaging of the food you buy matter to you?
6. Should the U.S. government be regulating BPA in food packaging? Why or why not?
7. What would it take to convince Americans to eat more healthfully? What are the barriers?
8. Briefly, share what you learned from your Weekly EcoChallenge. It’s okay to say you’ve not completed this week’s EcoChallenge. Your group can offer suggestions on making progress in this area and you can try it at another time.

Weekly EcoChallenge: Eating BPA-Free Meals

Choose a realistic but challenging way to reduce BPA in your diet. For example, plan meals for a day in which you eliminate all packaging with BPA from your diet. Eating fresh foods, for example, is a healthy way to avoid toxic packaging. Take it a step further: When choosing fruits and veggies, buy organic when pesticide loads are highest. Take it further and plan a whole week!

To find out more about NWEI’s annual EcoChallenge event, visit www.ecochallenge.org.

SUGGESTED READINGS AND RESOURCES

ORGANIZATIONS

Center for Food Safety works to protect human health and the environment by curbing the proliferation of harmful food production technologies and by promoting organic and other forms of sustainable agriculture. www.centerforfoodsafety.org

Organic Consumers Association is an online and grassroots public interest organization campaigning for health, justice, and sustainability. Its e-newsletter (www.organicconsumers.org/organicbytes.cfm), provides information on biotechnology/GMOs, Farm Bill, organic labeling practices, and much more.

ARTICLES

Please go to the Northwest Earth Institute website (www.nwei.org) for the most current list of articles relating to this session.

BOOKS

FoodFight: The Citizen’s Guide to a Food and Farm Bill by Daniel Imhoff (2007). Imhoff deconstructs the Farm Bill and what it means for Americans in terms of health, cost and food security.


In Defense of Food: An Eater’s Manifesto, by Michael Pollan (2008). Pollan argues that much of what we are eating today is not really “real” food and advocates we shift our focus back to a diet of less excess and more plants.

FILMS/DOCUMENTARIES

Food Inc. In this documentary, filmmaker Robert Kenner lifts the veil on our nation’s food industry, exposing the highly mechanized underbelly that goes unseen by the American consumer.

King Corn. This documentary follows the efforts of two friends as they work to produce a large crop of corn, the real driving force behind America’s food industry.
SESSION 6 — HEALTHY PLANET, HEALTHY SELF

WHAT YOU CAN DO

If after completing this week’s EcoChallenge you are motivated to take further action, consider the suggestions listed below. At your group’s final gathering, you will have an opportunity to review the list again and commit to an action item.

Label each of these action items with a code representing its priority in your life.

- **N**: Will do now
- **S**: Will do within the next month
- **L**: Will do within the next year
- **N/A**: Not applicable to me

BEGIN RIGHT AWAY:

- _____ Know where your products come from and value products originating closer to you
- _____ Eat lower on the food chain
- _____ Turn off lights when you leave a room
- _____ Unplug and reconnect with Earth
- _____ Lower your thermostat in the winter and raise it in the summer
- _____ Watch the 45 second video “You Have the Power: Save Energy” to gain a visual of greenhouse gas emissions our homes produce: [www.youtube.com/watch?v=6Eg_SEAnE-M](http://www.youtube.com/watch?v=6Eg_SEAnE-M)
- _____ Reduce and reuse, THEN recycle.
- _____ Other: ________________________________

RESEARCH AND APPLY YOUR KNOWLEDGE:

- _____ Know where your energy comes from and choose the greenest option. Go to [www.epa.gov/cleanenergy/energy-and-you](http://www.epa.gov/cleanenergy/energy-and-you)
- _____ Know where your waste goes. Google "solid waste management" followed by your location
- _____ Learn what climate change means for your region. Go to [www.epa.gov/climatechange](http://www.epa.gov/climatechange) and click on "where you live"
- _____ Learn what restoration projects are happening in your community and lend a hand
- _____ Fly less: consider vacations closer to home or taking the train
- _____ Learn what teleconferencing options you can use
- _____ Calculate your carbon footprint to identify your biggest sources of greenhouse gas emissions and set individual or family goals to reduce them. Go to [www.climatecare.org](http://www.climatecare.org) or to [www.epa.gov/climatechange/emissions/ind_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html)
- _____ Other: ________________________________

REQUIRES MORE RESOURCES (TIME, ENERGY, MONEY, PEOPLE):

- _____ Schedule a home energy audit and implement recommendations
- _____ Determine if solar panels are an option for your household
- _____ Hang your clothes out to dry
- _____ Attend a beach clean up. Go to [www.oceanconservancy.org](http://www.oceanconservancy.org) to learn more
- _____ Support conservation groups
- _____ Advocate for clean air, food and water for all
- _____ Organize a group to take the Northwest Earth Institute’s Reconnecting With Earth course
- _____ Don't give up, choose hope
- _____ Other: ________________________________
CALL TO ACTION

“The character of a whole society is the cumulative result of countless small actions, day in and day out, of millions of persons.”

— Duane Elgin, author, Voluntary Simplicity

The final session is an opportunity to celebrate the completion of the course, reflect upon your experience and discuss future actions you can take individually and as a group. Most discussion groups choose to share a potluck meal together as they discuss their experience and decide what they will do next. Prior to this session, please make sure to complete the evaluation form on page 7 and bring it to the meeting.

Many participants would like the continued support of a group to help them make changes in their personal lives. We suggest you review the What You Can Do pages before you meet for this final session and choose one from each session (sessions 2 through 6 have lists) that you can commit to doing. Write them down in the space provided below. At your final meeting, you can take time to share your plans and determine how you will provide accountability and support to one another.

In addition to making changes in their lives, group members often want to work together on a project. Should your group feel motivated to take on a collective project, the What You Can Do pages provide some suggestions that are appropriate for groups as well. The following list offers other actions taken by groups that have completed NWEI courses:

- Schedule a monthly hike or group gathering to continue engaging with each other
- Take part in a beach clean-up or river restoration project.
- Schedule monthly work parties to help each other with house projects, gardening, etc.
- If members live near one another, brainstorm ways to carpool to common destinations.
- Attend a local or regional planning meeting to weigh in on environmental health issues.
- Tour a local waste facility to find out where your garbage goes. Next, find out where to recycle those items that cannot be placed in curbside containers and organize a joint weekly/monthly pick-up or drop-off.
- Join a CSA; split a share with another member if you can’t use a whole share yourself.
- Start a letter writing campaign to leaders advocating for the changes you wish to see.
- Organize an event with a speaker or hold a film screening to promote awareness of environmental health issues. See NWEI’s film recommendations listed under “Suggested Resources” in each session.

Once your group reaches a consensus about what project you’ll undertake, create a specific follow-up plan and delegate responsibilities.

If you are interested in offering or participating in other NWEI discussion course programs, please visit www.nwei.org for a complete list of course offerings. At our website you can also support this work by becoming a member of the Northwest Earth Institute, joining our email list, and reading our blog. Thank you for your participation; we sincerely hope this discussion course was an enriching and inspiring experience for you!

<table>
<thead>
<tr>
<th>Session</th>
<th>Action item</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating Well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning House</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Healthy Communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curing Consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy Planet, Healthy Self</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MEMBERSHIP

Inspiring people to take responsibility for Earth.

Thank you for participating in this Northwest Earth Institute discussion course!

We hope that you found your experience to be meaningful and inspiring. If you would like to help others discover their role in fostering health and well-being, please consider joining NWEI as a member. Thanks to our members, we are able to reach communities across North America in an effort to create a sustainable future for us all.

To join, fax this form to (503) 227-2917 or mail it to Northwest Earth Institute, 107 SE Washington, Suite 235, Portland, OR 97214. You can also join online at www.nwei.org/join.

☐ I’d like to make a donation to the Northwest Earth Institute.

Name ____________________________________________________________
Address ____________________________________________________________
City __________________________ State ______ Zip code ________________
Telephone: Day (______) __________________ Evening (______) ____________

Email address ______________________________________________________

Individual Membership (tax deductible):
☐ Regular $35
☐ Household/Contributor $50
☐ Earth Steward $100
☐ Sustainer $250
☐ Patron $500
☐ Founder’s Circle $1,000

Please see our website or contact us for more information on member benefits for individual and business memberships.

☐ I’m already a member. Here’s an additional gift. $______________

Pay by credit card: ☐ Visa ☐ MasterCard
Card number ____________________________________________ Expiration date ______
Signature ____________________________________________________________

☐ I would like information on how to offer a course on:
☐ Menu for the Future ☐ Discovering a Sense of Place ☐ Voluntary Simplicity
☐ Global Warming: Changing CO2urse ☐ Reconnecting With Earth ☐ Sustainable Systems at Work
☐ Choices for Sustainable Living ☐ Healthy Children — Healthy Planet

Thank you for your support!

Northwest Earth Institute 107 SE Washington, Suite 235, Portland, OR 97214