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# Changing Planet, Changing Health: Q&A with Dr. Paul Epstein

*Published: April 20th, 2011 in [Impacts](#), [Projections](#), [Climate](#), [Health](#), [Policy](#), [Society](#), [Global](#), [United States](#), [Extreme Planet](#)*[+ Share](#) | [Print](#) | [Permalink](#) | [RSS](#)*By [Wendee Holtcamp](#)*[« Return to Extreme Planet](#)**ARCHIVES**[2011](#)[2010](#)[2009](#)

*Changing Planet, Changing Health* is the first mass-market book to focus on the public health impacts of climate change, which may include more frequent dangerous heat waves, increases in certain infectious diseases, asthma and allergies, and tree and crop diseases. Instead of just outlining all the frightening prospects and current realities, Dr. Paul Epstein, associate director of the Center for Health and the Global Environment at Harvard University, and science writer Dan Ferber provide some practical real-world solutions. I took a few minutes to ask Dr. Epstein some questions by phone, and pick his brain on how we can get from these current climate and public health scenarios to a more sustainable future.

**Q. You lay out a number of practical solutions, and one of these is creating a new global environment and development fund that would support the creation of a low-carbon infrastructure. You propose a "Tobin tax" to raise money for this fund, which is something like a quarter-penny on every dollar used in large currency transactions, and say that would generate around \$500 billion for global environmental initiatives. Can you tell us a little more about this?**

*Epstein:* The Tobin tax is a levy on currency transactions done mostly by banks and large financiers that trade on the difference between currencies — Yen, Euros, dollars. It's a big casino. It's called "hot money" and it can move in and out of countries rapidly. There are about \$4 trillion in these financial transactions every day. All of it is speculative movement of capital, it destabilizes countries, and the idea is to throw a wrench in that. What's really valuable is that states do not have to contribute, since nation-states are often hurting financially, but the tax is on the financial industry. It can generate a substantial sum.

**Q. Is there any progress towards getting such a fund in place, and is there resistance to the Tobin tax idea for funding it? Is this being discussed at all in the current discussions of financial reform in the U.S.?**

*Epstein:* It's much more talked about and accepted in Europe. Most of the European countries have talked about it. The Tobin tax gets mentioned in the context of these large international meetings, such as the G20 meeting, where it was



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Visualization of CO2 emissions from U.S. power plants burning fossil fuels.

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mentioned by [French President Nicolas] Sarkozy. The U.S. has not addressed it and clearly the financial sector is not ready to make this move. When climate change threatens the financial sector because of extreme events, then we may see more talk.

**Q. Is there any alternative funding mechanism for this global environmental fund besides the Tobin tax?**

*Epstein:* Some have proposed taxes on airlines, or on carbon. We're concerned these could be regressive and hurt poor nations, whereas a levy on the financial sector would be stabilizing and helpful to the economy. Think of it as an investment of the brain — the financial sector — into the body — the agriculture and industrial sectors. It would be a wonderful investment in our common future. Not all nations are equal parts of the problem, but all can be part of the solution. If the poor nations are given funds to make renewable sources of energy, this could help world trade. This could be the mechanism by which sustainable development could be achieved.



*The use of DDT was banned by the U.S. government in 1972. Until then, it was used widely as a pesticide on crops. Credit: istock*

**Q. In the "Healthy Solutions" chapter, you mention that we need to apply the precautionary principle which says that, “we should avoid or minimize risky practices, particularly when the consequences could be great.” In the U.S., we have consumer protection agencies that supposedly act as a guardian against allowing risky or dangerous products and practices from being used in society, but in practice, we have seen many cases where we learn down the road that a product’s safety was not as good as originally thought — everything from cigarettes to asbestos to DDT. It seems that when there is big money to be made, industries and businesses have not been very good at abiding by this wise**

**principle. How do we change that in practice?**

*Epstein:* That’s a good question. We’ve got to learn from the Europeans. They use the Precautionary Principle for new chemicals, which holds forth that the chemical is judged to be potentially noxious until proven innocent. We have the opposite; we use things that are harmful for many years until we prove that they are harmful. It’s a testimony to the power

of corporations — petrochemicals and pharmaceuticals and any industry that has a particularly noxious waste stream.

Change has to come from a government that reins in the corporations, and that makes us analyze potential technologies before we end up with the "long tails" — asbestos, lead, CFCs from refrigeration. We have to think through the life cycle for chemicals and technology [from cradle to grave]. We just did a full cost accounting for the [life cycle of coal](#).

**Q. In your final chapter on "Rewriting the Rules", you say: “For hundreds of years, our economy has been driven by endless growth and consumption. But in a world with finite resources and a limited capacity to recycle waste, endless consumption is not possible.” This sounds a lot like the concept of a “steady state economy.” Are you familiar with this and do you embrace it? If so, how do you propose to get others on board?**

*Epstein:* We have to move towards that state because we have finite resources and we are generating wastes faster than our biogeochemical cycles are able to absorb them. We’ve got a situation now where finance is out of control. There’s huge movement of capital swiftly across borders that is destabilizing economies. So we need to address old issues as well as the climbing debt that many nations are facing. These people are chopping down their forests to grow corn. The rules now are stacked against the preservation of natural resources and we have to change the rules in order to get to this steady state economy that we’d all like to see. I think that’s our only alternative. Endless growth is not possible with a limited space in which to live. The path we are on is not sustainable...

[Economist John Maynard] Keynes realized that you don’t have to change the whole system and all the behavior of the parts, but you do have to change the rules, and that can address the issue of growth and consumption. We can all have visions of what we would like to see but if the financial system goes by the same rules, we’re not going to get there.

**Q. Nuclear energy technology is already developed, provides unlimited energy, and is a low-carbon energy supply. Many folks who embrace the concept of a low-carbon economy, from President Obama to certain environmental groups, have accepted that nuclear can be part of the effort to reduce our dependence on carbon-based fuels in order to bring global climate change under control. Yet nuclear energy has very real and often unpredictable human health risks, as we are seeing in Japan. What are your thoughts on whether nuclear energy can help North America become less dependent on fossil fuels?**



*Officials in protective gear check for signs of radiation on children from the evacuation area near the Fukushima Daiichi nuclear plant in Koriyama, March 13, 2011. Credit: Kordian/flickr*

*Epstein:* We need to look at the life cycle: from the mining, transport, milling and then processing the fuel rods, and then transport again to the nuclear power plants, and finally what we do with the waste. All of these are plagued by three things — safety, security, and storage. All three have unanswered questions. Well, now we know safety is not assured. Security is not assured. We haven't solved the issue surrounding permanent storage of these spent fuel rods that are an extreme hazard. And then there's the timeline: nuclear plants take 10 years and cost \$12 billion to build. It's not an infinite renewable resource, it's a finite resource. It's frightening what is happening in Japan, it's frightening the impact on the marine environment, and the local impact in Japan. This is a dreadful accident and it certainly highlights the need to look at all these impacts.

This country [U.S.] is looking at small modular units that are cheaper to build, but that doesn't deal with all the upstream stages nor what to do with the spent fuel rods. So replacing carbon pollution with nuclear is not a good answer to climate change.

**Q. Without nuclear, do we have the technology and infrastructure to support renewable energy sources — or can we get there before it's too late?**

*Epstein:* This is *the* question. What we're suggesting is that we need to invest in the [smart grid](#), both public and private

partnerships, to get ourselves ready for renewable sources of energy. That's what can reduce demand and allow renewable energy to plug into the grid.

We don't have a big solution yet, we've got to be honest. There are lots of ideas out there, including putting solar panels in space and beaming down the energy in microwaves. There was an article on this in the *New York Times* several years ago. We need to think through all these ways of generate power, but in the meantime we've got to reduce the waste and create a grid. We need a lot better batteries but we have the technology to do that today.

**Q. Since you wrote the book, have you seen any major changes related to public health and climate change, positive or negative, that you think the public should know about?**

*Epstein:* I think we've learned that winter weather anomalies may be part of climate instability. We know that in winter, more precipitation is falling as rain, rather than snow. This sets the stage for ice storms. Because of warming oceans, which have stored 22 times as much heat as the atmosphere and the continents since the 1950s, we have greater evaporation. Warmer oceans are [causing ice in the Arctic and on Greenland to melt](#) . Warm air holds more water vapor so there are heavier snowfalls, rainfalls and ice storms.

We've sort of gone along thinking we will have more heat waves and fewer problems in winter, but the storm tracks of winter have changed dramatically, and I think this comes as a surprise to most people. We joke that it's orthopedic weather in Boston. There are public health impacts in terms of injuries and falls from shoveling, as well as motor vehicle accidents. And then there are the power outages themselves. There are health issues in a larger sense from these winter weather anomalies, which can damage economies.

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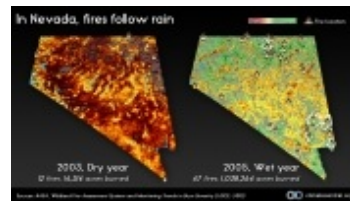
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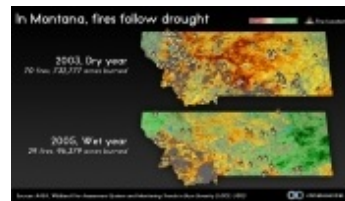
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