About Sandra Steingraber

Ecologist, author, and cancer survivor, Sandra Steingraber, Ph.D. is an internationally recognized expert on the environmental links to cancer and reproductive health. She received her doctorate in biology from the University of Michigan and master's degree in English from Illinois State University. She is the author of Post-Diagnosis, a volume of poetry, and coauthor of a book on ecology and human rights in Africa, The Spoils of Famine. She has taught biology at Columbia College in Chicago, held visiting fellowships at the University of Illinois, Radcliffe/ Harvard, and Northeastern University, and served on President Clinton's National Action Plan on Breast Cancer.

Steingraber's highly acclaimed book, Living Downstream: An Ecologist Looks at Cancer and the Environment, presents cancer as a human rights issue. It was the first to bring together data on toxic releases with newly released data from U.S. cancer registries. Living Downstream won praise from international media, including The Washington Post, The Nation, The Chicago Tribune, Kirkus Reviews, Publishers Weekly, The Lancet, and The London Times. In 1997, Steingraber was named a Ms. Magazine Woman of the Year. In 1998, she received from the Jenifer Altman Foundation the first annual Altman Award for "the inspiring and poetic use of science to elucidate the causes of cancer," and from the New England Chapter of the American Medical Writers Association, the Will Solimene Award for "excellence in medical communication." In 1999, the Sierra Club heralded Steingraber as "the new Rachel Carson." And in 2001, Carson's own alma mater, Chatham College, selected Steingraber to receive its biennial Rachel Carson Leadership Award.
Continuing the investigation begun in Living Downstream, Steingraber’s latest book, Having Faith: An Ecologist’s Journey to Motherhood, explores the intimate ecology of motherhood. Both a memoir of her own pregnancy and an investigation of fetal toxicology, Having Faith reveals the alarming extent to which environmental hazards now threaten each crucial stage of infant development. In the eyes of an ecologist, the mother’s body is the first environment for human life. The Library Journal selected Having Faith as one of its best books of 2001. In 2002, it was featured on Kids and Chemicals, a PBS documentary by Bill Moyers.

An enthusiastic and sought-after public speaker, Steingraber has keynoted conferences on human health and the environment throughout the United States and Canada and has been invited to lecture at many universities, medical schools, and teaching hospitals—including Harvard, Yale, Cornell, and the Woods Hole Oceanographic Institute. She is recognized for her ability to serve as a two-way translator between scientists and activists. In 1999, as part of international treaty negotiations, she briefed U.N. delegates in Geneva, Switzerland on dioxin contamination of breast milk.

Formerly on faculty at Cornell University, Sandra Steingraber is currently Distinguished Visiting Scholar at Ithaca College in Ithaca, New York. She is married to sculptor Jeff de Castro. They are proud parents of eight-year-old Faith and five-year-old Elijah.

Interview

Terrain.org: You have been compared to Rachel Carson—both pioneering scientist and environmental essayist—winning the Rachel Carson Leadership Award from Carson’s alma mater Chatham College in 2001. What do this award and comparison mean for you? Has Carson been an inspiration?

Sandra Steingraber: Carson is my guiding spirit. Like her, I went through an existential crisis in college over whether to study creative writing or biology, and like her I ended up doing both for awhile (I have a Ph.D. in ecology and a master’s degree in poetry) and finally brought the two together in my life as a full-time science writer. Like Carson, I seek to seduce my readers through some pretty tough science by finding a language beautiful and compelling enough to honor the loveliness of the biological systems that I write about. But Carson is also a counter-model for me. I write autobiographically about my own cancer diagnosis whereas she kept that part of her life a secret from her readers.

Terrain.org: Tell us about cancer as a social justice and human rights issue, which is the basis for Living Downstream. What is your ongoing work in this arena, and what are the newest developments
From the Faroes Statement

The accumulated research evidence suggests that prevention efforts against toxic exposures to environmental chemicals should focus on protecting the fetus and small child as highly vulnerable populations. Given the ubiquitous exposure to many environmental toxicants, there needs to be renewed efforts to prevent harm. Such prevention should not await detailed evidence on individual hazards to be produced, because the delays in decision-making would then lead to propagation of toxic exposures and their long-term consequences. Current procedures therefore need to be revised to address the need to protect the most vulnerable life stages through greater use of precautionary approaches to exposure reduction.

Torshavn, Faroe Islands
May 24, 2007

Sandra Steingraber: Increasingly the scientific community is recognizing the human rights dimensions emerging from the field of fetal toxicology and environmental pediatrics. That is to say, the new science is showing us that fetuses, infants, and children are not adequately protected against harm by our current regulations on toxic chemicals. They don't have functioning blood-brain barriers or fully developed immune systems. Their skin is more permeable. They eat and inhale more house dust. Their brains are not fully wired together yet. Tiny exposures early in life are, in some cases, more damaging than larger exposures later in life, but the special vulnerabilities of children have not, historically, been taken into account when forming environmental policies.

Just two months ago, a group of 200 of the world's leading environmental scientists gathered in the Faroe Islands north of Scotland and release a signed declaration, the Faroes Statement, that argued for a human rights approach to protecting the very young against toxic trespass.

Terrain.org: A Canadian production company recently purchased the film rights to Living Downstream, and will likely produce a documentary. What will your role in the production be? What is your hope for the film?

Sandra Steingraber: I'm thrilled. I love my film director, Chanda Chevannes of the People's Picture Company. She completely gets Living Downstream—both the scientific argument and the lyrical, intimate, rhapsodical elements. She understands that the book is both a love story (between me and my home town) and an exposé (about the toxic contamination of that town). And she brings a cinematic and visual wisdom to the project that I lack. I am not a visual thinker. (That laughter you hear in the background is my husband. He is a sculptor and believes that I am utterly incapable of thinking in pictures. Which I am. I need words.) So I am completely deferring to Chanda and her crew, who are very easy to work with, as they make their creative decisions as film makers.

I'm so pleased that the book will have another life in a different
medium. I hope it will reach people who live in many of the toxic communities where I am invited to speak and who may not have a bookstore—as my hometown does not—to make this information available.

As for me, I'm actually in the film itself. Yikes. I've learned to be demonstrative as a public speaker at the podium, but privately I tend to be very interior. It's a Midwestern quality I guess. It's actually stressful to me to express, as a speaking person being filmed, some of the emotive qualities that I'm able to find a vocabulary for as a writer. But I'm learning as we go.

Of course, films are very expensive to produce, and we are all keeping our fingers crossed that funding will come through for this project.

Terrain.org: In 2006 you received a Heroes Tribute from the Breast Cancer Fund. What has this award meant for you? Are you working with the Breast Cancer Fund now, and if so, how?

Sandra Steingraber: I admire the Breast Cancer Fund. I'm glad my work as a science writer is useful to them. That was my big dream, of course: that I could build a bridge over the breach between what we in the scientific community know about the links between cancer and the environment (quite a lot) and what the public hears about those links (almost nothing). The Breast Cancer Fund brings out of the sound-proofed technical literature the state of the evidence about breast cancer's environmental roots and then takes political action based on this science. It's nice for me to be part of the conversation.

All that being said, I certainly don't feel like a hero. I labor away in the vineyards that Rachel Carson planted and try on a daily basis to find a language to talk with the public about various technical subjects—like the ability of the pesticide atrazine to enhance aromatase production in ways that increase estrogen levels. I don't consider that exactly heroic. Organic farmers are heroic. People who stand up and speak to their school boards and their city councils about toxic waste dumps in their own communities—risking the wrath of their neighbors and employers—those are the real heroes. I just try to supply the heroes with some useful, reliable science. And inspire them along the way.

Passing a jar of my own breast milk around a table of United Nations delegates in Geneva... that was probably one of the bolder things I've ever done.

Last spring, the Breast Cancer Fund commissioned me to write a monograph on the falling age of puberty in U.S. girls. That's what I've devoted most of my research and writing time to for the better part of a year. It will be released in late August and thanks to several generous funders, will be freely available to the public in both hard copy and electronic copy. (Visit www.breastcancerfund.org/puberty to place an order.)

Terrain.org: You have written, “I didn’t mean to raise my two kids as part of a human experiment in food preferences. It just worked out that way.” What is the experiment, and how is it going? What advice
Sandra Steingraber with her children.
Photo courtesy Organic Valley Family of Farms.

Sandra Steingraber: When Jeff and I moved from Boston to a log cabin out in the woods near Ithaca, New York, our television set was stolen out of the back of the truck. We never replaced it. We did all our shopping at the local food coop not only because of the organic food but because the coop has a play area where kids can play while their parents drink much-needed cups of coffee and read the Arts section of The New York Times.

The unintended but happy consequence was that my two kids, now ages 8 and 5, have never been advertised to by the food industry. Not on TV, not in the grocery store. Their food preferences are entirely determined by their direct relationship with the food itself. Both of them are great eaters and have adventurous palates. The first time they were confronted with a Happy Meal from McDonalds, both of them refused to eat it. Elijah said it was "too brown." (meat, bun, coke, fries = shades of brown). He's used to colorful foods like carrots, red peppers, sweet potatoes, and oranges. Faith said the Golden Arches looked to her like two limp French fries and also the food was too salty.

I learned in that moment that junk food is not necessarily innately attractive to kids. You have to learn to like it. You need cartoon characters to tell you it's good.

As for advice, I make it a personal practice never to tell people what to do. As an autobiographical writer and speaker, I simply tell my own story, lay out the scientific evidence, and then step back. This is also my belief as a Quaker. I believe in speaking truth to power. I believe in personal testimony and the power of human utterance. I also believe that everyone needs to discover their own path and their own voice.

Terrain.org: You have the unique opportunity—as distinguished scholar in residence at Ithaca College's Division of Interdisciplinary and International Studies—to work with students in such areas as writing, journalism, biology, environmental history, and law. What kinds of multidisciplinary work and teaching are you undertaking with the students? How do you like teaching? What are you learning from the interdisciplinary approach, and is such an approach important for all teachers, all writers, all humans?

Sandra Steingraber: Ithaca College has given me a wonderful opportunity to do my work in residence at an institution that is profoundly changing its own relationship to the ecological world. IC has made sustainability the cornerstone of its...
pedagogy as well as its physical operations. It's an incubator for ideas and practices that will, we hope, seep out into the world at large. Frankly, when Ithaca College first lured me from Cornell in 2003, I thought its sustainability theme was little more than a recruiting tool. It's not. The college is deeply serious about sustainability, and it is, I believe, on the cutting edge here.

At IC, I guest-teach in many classes ranging from journalism and history to law and biology. Environmental health and environmental human rights cuts across many disciplines. I've even taught in an environmental film course—which is very nice for me since I'm in the middle of this film project of my own.

The administration at Ithaca recognizes that I'm a writer and a biologist and a social critic. I get to show all my colors when I'm on campus. It's a great place for me. In return, I act as a kind of unofficial ambassador for the college when I travel and give lectures and grant media interviews. IC is well known for its sustainability vision. I get questions all the time about IC when I'm out on the lecture circuit. My coolness quotient went way up this spring when I could casually mention my (small) role in the Finger Lakes Environmental Film Festival, which is headquartered at IC. We screen a huge number of environmental films during the festival. I get called in to talk with students about the science of the underlying topics—e.g., ecological devastation in Iraq or birth defects along the Mexican border.

Terrain.org: As an artist and a scientist, do you sense society in general, or political administrations specifically, trying to divide or categorize art and science as separate pursuits? Are they? What is the importance of integrating art and science? What inspiration do you draw from the visual arts, like sculpture, for your scientific work? Alternatively, what inspiration do you draw from science, like biology, for your artistic work?

Sandra Steingraber: Well, this will probably surprise you, but I'm very old-fashioned and prefer my science and my art served up separately. I think they are two different ways of knowing the world. Both art and biology are about the mystery of being alive, but science seeks to solve the mystery while art simply says "behold." I try to deploy the best tools of creative writing—sound, meter, imagery, plot—to make science come alive for my readers. I use creative human narratives as the arc on which to hang the science. When I'm really writing poetry, though, I'm not thinking like a scientist at all. It's all about tone and finding images to stand in for intangible feelings.

Music and the visual arts are something I get to enjoy because of who I'm married to. It's a great antidote to the scientific, deductive, evidence-based way of approaching the world.

Terrain.org: “Science is slow” is a recurring statement in your work. In a society where one-button quick-fix solutions appear to be the expected norm, however, how do we work at resolving problems in the short-term? How do we obtain the patience to wait for slow science? Are writing and art part of the intermediary?

Sandra Steingraber: When lives are a stake—especially the lives of
children—we can't wait for the wheels of science to grind slowly on. That's where the precautionary principle comes in. We have to act on good but partial evidence—not absolute proof. As a parent, I do this all the time. In my house, you don't ride your scooter or your bike without a helmet. If you do, the scooter goes in the barn for a week. I don't need absolute proof that my child will be harmed. I just need to know that the situation is inherently dangerous, and that is my trigger for action.

I think we need to bring the same approach to pediatric environmental health. If a chemical is inherently toxic and is known to, say, accumulate in mother's milk or contaminate drinking water or find its way into umbilical cord blood, then it has no place in our economy. We should move immediately to phase it out of use and production and seek non-toxic solutions. This comes out of the same impulse as calling your children out of the pool when you hear thunder in the distance. You don't need to wait for an electrocution to know that you don't swim when there's lightning.

Yes, writing and art are part of the intermediary between recognition of a social problem and the execution of a meaningful solution. Just as abolitionist writing played a role in ending slavery, I believe environmental writing can play a role in ending unsustainable economic practices. Indeed, my son is named for the abolitionist writer Elijah Lovejoy.

Terrain.org: In Having Faith, you were “a pregnant biologist searching for the voices of mothers and scientists,” resulting in an intimate, scientific look at pregnancy, fetal development, childbirth, and breastfeeding. Yet the book is also a spiritual journey, so beautifully displayed in the chapter on Faith’s birth itself. What have you learned of the sacred in our lives—in the connections between mother and child and environment—from that experience? What do you continue to learn from writing Having Faith now that you have two children?

Sandra Steingraber: Having babies was both the most ecstatic and the most biological thing that I've ever done. It's the best thing that ever happened to me. It's religious experience and a profoundly corporal experience all at once. The childbirth scene in Having Faith was my favorite scene to write and remains my favorite now. It's where I could really use poetry to great advantage, with all its rhythmical and metrical possibilities. I could variously slow down and speed up the action depending on the syllabic construction of the words themselves. Poets are always messing around like this. It was fun to do this in prose.

I was disappointed in the childbirth descriptions that I found in the published literature. First of all, there are not very many. Second of all, most are badly written. We have whole genres of books about warfare and what that extreme experience is like. We have
none about childbirth, which is every bit as profound a rite of passage. I simply decided that if I wanted to seduce my readers through some scary science on the environmental threats to pregnancy that I was going to have to write the best childbirth scene in the English language. That was my goal. My readers can decide if I succeeded.

Now that Faith herself is old enough to read, I have a different relationship to the character of Faith in the book. The real-life Faith is a conscious verbal being now, with a memory and with the ability to distinguish a person from a persona. She is no longer simply my muse and my subject matter. Now my mother's need to protect my children and provide them privacy is bumping up against my writer's need to tell the story of my life. Because my life is no longer my own. It's symbiotically intertwined with my children.

Of course, now I'm also the mother of a son, which is an entirely different experience. One is not exactly mirrored by one's child. The romance between Elijah and me is different than the romance I have with Faith. Writing it would require a whole different vocabulary.

Terrain.org: What's next for Sandra Steingraber?

Sandra Steingraber: Well, let's see. In an hour, my daughter has to be at her piano recital rehearsal. Elijah will get off the bus at 4 pm and will be hungry. I have to figure out what to make for dinner, and I think we're completely out of vegetables. Then I need to find my notes for the class I'm teaching next week at Sterling College as part of the Wildbranch Workshop on environmental writing. Oh yeah, and before the end of the business day, I need to reserve a rental car, and reschedule two medical check-ups.

In short, I'm dancing as fast as I can, and I'm not so great at long-range planning. But here is what I think is on the docket:

I'll continue filming Living Downstream. I'm a columnist and contributing editor at Orion magazine, and so I'll continue to write personal essay for that publication, which is a joy. I'll also be shepherding the puberty report around for awhile until finds its own way in the world. Right now I'm doing lots of media interviews for the book, Courage for the Earth, about Rachel Carson, of which I'm a contributing author. And soon, I hope, I'll see my way clear to write my next book proposal. I've been gathering string on it, scientifically, for quite a while and have the science all worked out. Now I need to work out the story line, so I'm busy agonizing about lots of writerly issues—like the risks and benefits of past tense versus present tense—about which, if I make the right decisions, readers will never even notice because the carpentry will all be invisible. Nevertheless, it all takes time and thought, and I'm miserably slow at this part.

Okay, I'm off to the piano recital rehearsal....