

After The Fact

A publication of the Institute for Science and Interdisciplinary Studies

Summer 1999

Energy Project Picks National Technical Up the Pace

By Scott Tundermann

ISIS's sustainable energy work met a welcome opportunity to collaborate on grassroots community organizing this April with "Give Your Car a Break Week," founded last year by the Amherst Earth Day Committee. We discovered that the Committee was already underway organizing an event very much like one that we were planning for the same time (and had already proposed to a couple of funders), so it only made sense to join forces. ISIS, with our organizing expertise and resources in the academic and press worlds, and the Committee, with their volunteers and community connections, agreed to cosponsor the week's activities.

Give Your Car a Break Week incorporated a range of activities encouraging individuals to leave their cars behind and use other forms of transportation, including bicycles, walking or jogging, and the free local bus system. In addition, the emphasis on *avoided travel miles* allowed for such alternatives as carpooling, telecommuting, and just plain not going out. The point was to remind people about the detriments of gas-powered automobile use—

Continued on page 5



Cutting the ribbon for Amherst's new bike lane, where a cyclist waits to show safe riding around a parked car

Experts Network: the Vision

By Peter Haas

In the last issue of ATF, we reported on our budding National Technical Experts Network (NTEN) concept and our plans to build it. NTEN is a project to provide citizens with the experts they need to understand the military toxic waste cleanup process. While awaiting EPA funding, we have time to focus on the rationale behind the NTEN idea and how it fits ISIS's vision of reconstructing and democratizing science.

The environmental restoration challenge in federal facilities, especially military sites, is enormous. Based on the complexity of the problem, the Federal Government convened the Federal Facilities Environmental Restoration Dialogue Committee, which in 1993 and again in 1996 called for enhanced public participation and stakeholder involvement in the cleanup process and decision-making at federal facilities nationwide. This "experiment" has been somewhat successful, as the federally regulated Departments of Defense (DoD) and Energy (DOE) have now instituted over 300 advisory boards through which the public participates in cleanup decisions that affect the health and environment of their communities.

Unfortunately, the effectiveness of these boards, commonly known as Restoration Advisory Boards (RABs), is mixed. In many cases they become rubber-stamp committees whose input into cleanup and protection of community interest is minimal. Quite often, members of these Boards are not representative of the surrounding communities, especially when they are dominated by retired military officers or business developers who want to have as little negative publicity on the installation—and the military in general—as possible. Consequently, they advocate for expeditious cleanups that minimally

Continued on page 8

Reading with Our Genes

Dean Hamer and Peter Copeland's book *Living with Our Genes* (Doubleday, 1998) is an odd, funny, maddening, engaging, informative, misleading, inconsistent, and often contradictory amalgam of personal stories, broad-brush glosses of scientific research, pop sociology, fiction, and self-help philosophy. Which makes it the perfect guide for thinking about genetics today. It may not be "absolutely terrific!" as the behavioral geneticist Robert Plomin blurbs it on the cover, but it is fabulous.

Just *fabulous*. I really mean that. Let me explain.

I was fully prepared to loathe it. Hamer and Copeland's first book, *The Science of Desire*, was not fabulous. That one banked on Hamer's genetic study that claimed a statistical link between the region Xq28 on the X chromosome of a number of self-identified gay men, and a big amorphous category called "homosexuality." That's a lot of words, so it usually is just referred to as "the gay gene" study. Which is where "science analysts" like me are supposed to come in, pointing out all the flaws, gaps, assumptions, stretches, and other processes that go on in the genetics laboratory, in the writing of a scientific text, and in its subsequent popularization. It's the job of critique that we've been trained for, and we generally do it pretty well.

So I was loaded for bear, as the saying goes, when *Living with Our Genes* (let's call it LwOG for short) came out. More of that "biological determinism," more "genetic reductionism" to unmask and denounce, to keep people from being taken for a ride. And as I read I could feel that whole critical apparatus kicking into gear, fueled by plenty of egregious statements and exaggerations, as you'll see.

By Michael Fortun

But in loading for bear I had jumped the gun. I was already reading for what the book's message was—or what I already *thought* its message was—and I had skipped over the prior questions: what kind of text is this? What are its parts? How are they put together? Once I started asking those kinds of questions, I realized it was a little more complicated and a lot more interesting than I had first thought. And that it wouldn't be such a terrible calamity if a lot of people read this book, especially if they could be encouraged to read it in a certain way. So here's some suggestions for how to read this "groundbreaking book about the science of personality, behavior, and genetic destiny."

Start with the Table of Contents. It tells you there's an introduction, called "Emotional Instinct: The Genetic Roots of Personality." I know this sounds like the usual "it's all in your genes" rap, but remember: don't jump the gun. Because then you've already lost, and gone ahead and done exactly the equivalent to what you were about to criticize: it's all in your introduction. Or worse: it's all in the title of your introduction. Clearly there's going to be some reductionism in this book; should we really have expected there not to be? Believe me, I believe in "roots" even less than you do, and this kind of language sends me through the roof. But we'd both be compounding the error if we thought "genetic roots" rooted this book, and made all the other phrases, sentences, and chapters just a bunch of twigs and leaves.

Then there's a Conclusion titled "Engineering Temperament: Cloning and the Future Politics of Personality." You can't tell offhand if *engineering* is supposed to function as a verb or an adjective—maybe they're going to explain why some people are pre-

disposed to becoming geneticists because they have "the engineering temperament"—but once you get there, you'll see that it's a verb. You also can't tell that it's fiction. If I were trying to be more precise, I would say that the "conclusion is *more firmly* in the fictional genre than are portions of all the other chapters," but for now let's leave it at: the concluding chunk of text in this work of non-fiction is fiction. What's up with *that*? (Hint: I've already told you that I think the book is *fabulous*...)

But the Conclusion of the book is not the end of the text. There's my favorite part of every book, the Index. Having an index is like having a read-out of the book's genetic code. You can almost make yourself feel like you're looking at this long inscrutable strand of ACTTACGGCTAAA-CAGTACCGGTCACT when you scan down the list of terms such as

After the Fact is published semi-annually by the Institute for Science and Interdisciplinary Studies (ISIS) in Amherst, MA.

We invite you to submit your comments and writing to *After the Fact*. Contributions may be made on paper or disk (preferably MS Word formatted) and addressed to the editors at:

ISIS
893 West Street box PH
Amherst, MA 01002-5001

or via email at isis@hampshire.edu
or by fax at (413) 582-5611

We reserve the right to edit contributions for clarity and/or space considerations or to decline to print them altogether. Copy and disks will not be returned to the contributor unless sent with a self-addressed, stamped envelope.

Managing Editor:

.....Michael
Fortun
Production Editor:

.....Scott
Tundermann
This issue's contributors:

.....Peter Haas
.....Jim
Oldham

- Altered states of consciousness, appeal of, 157
 Assortative mating, 49
 Beta-amyloid plaques, 286-90
 GABA (gamma-aminobutyric acid), 148-49
 Inhibition. *See* Harm avoidance
 Money, windfall of, 83
 PCB exposures, 121
 Poe, Edgar Allen, 85
 Sex testing, 165-67
Trading Places (film), 47-48
 Twin studies, (multiple entries)
 Zuckerman, Marvin, 30, 133, 178

and ask yourself: what kind of narrative/organism is going to contain all these divergent forces?

An index inspires a number of interesting scenarios which suggest some things about the allegorical equivalence between texts and organisms. One scenario is the Word/Genetic Engineering one. If you did a little knock-out experiment and deleted, say, "PCB exposures," would the text still function adequately? Could you design a vector that would substitute Elmore Leonard for Edgar Allan Poe, just to kind of see what happened to the book's message? What if a massive printing error resulted in "Twin studies" becoming "Twins" (film). *See* Schwarzenegger, Arnold, and DeVito, Danny"?

Then there's the Narrative/Developmental Biology scenario. What an index lays bare is the inescapable need for some kind of narrative shell. Could I, given enough time and a big enough windfall of money, start with this index and construct another text around it, in perfect one-to-one correspondence, that would have an entirely different message? Well, maybe not *entirely*. It would still be about human habits, cool molecules, evolutionary processes, dynamic social systems, concepts of varying specificity, the work of scientists, pop culture, and *n* other terms. But the experiment would be to see how many texts about be-

havioral genetics are possible with a certain set of elements and parameters held constant.

But the main point here: store this image of the index. It's a useful one, as a reminder that the entire text needs to be read not only as narrative, but as amalgam of fragments. This book (like any other) is both coherent and incoherent. And that's why LwOG is an especially good guide to genetics today, because it, too, is both coherent and incoherent. Living with our genes means living with these kinds of contradictions, semi-forced conjunctions, the sense that things don't necessarily make perfect, seamless sense.

Now for the body of the text.

LwOG is a popular science book written by a scientist and writer who had previously "teamed up" on *The Science of Desire*. When people, words, and things team up, you get an excess, something that's more than the sum of the parts.

What's teaming up here in this book? Many, many things, but for starters let's say: fiction and non-fiction. Each chapter starts with a character's story, followed by an account of how the life sciences, primarily genetics, are providing new explanations for the behavior of these characters. After telling you what "the latest research shows" (please ignore this small contradiction), then there might be a narrative interlude, followed by more scientific assurances and assertions, but each chapter ends on an upbeat, self-help philosophical plane. This can often be very interesting, given the fact that it often contradicts previous statements. But this is in fact why the entire book is interesting as a metonym for "the science of personality, behavior, and genetic destiny" today. Like the index of sepa-

rate terms, each of these genres has its separate existence: the personal account, the scientific narrative, the uplifting advice. There's some connection to the scientific literature listed in the back, but there's not even a footnote number to direct you to a particular paper or book for further elaboration. You're supposed to have the illusion that they all come together and form some kind of "seamless whole."

But they don't.

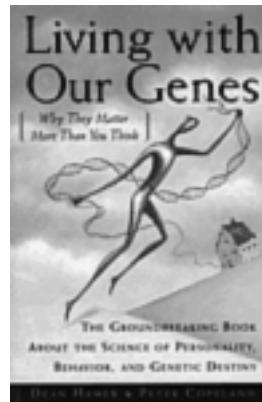
And—as almost any self-help authority will tell you—that's okay.

For example, the "Introduction" on "Emotional Instinct: The Genetic Roots of Personality." The narrative proper begins "the invitation to her twenty-fifth high school reunion came out of the blue, and Janice was

surprised anyone had been able to keep up with all her address changes over the years." Janice had been married to an older businessman who "wasn't much of a lover," but did teach her about finance before they divorced. Janice took the money and ran to southern California, where she soon had a successful real estate business and a string of lovers, including her yoga instructor. She's had the SoCal experience of becoming drug and alcohol free with the help of a self-help group, although she still smokes for fear of gaining weight if she quit. She decides to go to the reunion.

Cut through the blue to: Ralph. Ralph is...well, a Ralph. B average in high school, state university, works at the state wildlife commission, lives in the burbs with three kids and a wife in a "harmonious albeit no longer passionate relationship," getting a little fat and going a little bald. And in high school, Ralph had a crush on Janice, to which Janice was oblivious.

They sit together, they talk, Ralph
Continued on page 4



Genes

from page 3

gets flustered, Janice stays cool, and they depart with the mutual comment: you're just the same; you haven't changed one bit.

Hamer and Copeland ask: "What makes Ralph 'just the same' as he was 25 years ago, despite having added 40 pounds, a wife, three kids, and a career? How can he think that Janice hasn't changed despite her California makeover?" *Something equivalent to this very narrative on the page here in front of your eyes* is not the answer supplied by the text. The text's answer is that Janice and Ralph were able to see beyond, or beneath, this surface of appearances to recognize each other's "core personalities, much of it hardwired into their bodies since birth, a genetic legacy from their parents as surely as the color of their eyes." Janice and Ralph are not lumbering DNA robots, as Richard Dawkins would have it; they're lumbering automated DNA sequencers, able to peer into and read out the qualities of a person's helical core. Someone should patent them.

Now comes the definition of the three layers of people: personality, character, and temperament. The book wants you to look beyond the words, deep into them, just as Janice and Ralph looked deep into each other's core personality without ever really knowing they were doing it. Down, down, down, your sight plunges, until you come to the real things themselves: personality, character, temperament.

"Personality is what makes each person unique." Personality is the whole, "complex" set of behaviors and attributes that a person "has," in a "seemingly infinite variety." And "the latest research in genetics, molecular biology, and neuroscience shows that many core personality traits are inher-

ited at birth, and that many of the differences between individual personality styles are the result of differences in genes." (p. 6)

This "inborn dimension of personality" is called temperament. And when it comes to temperament, "you have about as much choice... as you do in the shape of your nose or the size of your feet." But at the same time, this doesn't mean that "there is a simple set of instructions or blueprints," or that you're "stuck" with certain traits "from birth" – meaning conception. The great thing about temperament is its "built-in flexibility that allows us to adapt to life's hurdles and challenges." To that flexible part we give the name "character." Character is that part of you that you can buy self-help books for—although which "you" is doing the buying and which the reading would be an interesting conundrum to unravel. (p. 7)

Personality, temperament, character. These three subjects of the book also happen to be each chapter's structure, as I described it: a story about someone (personality), an account of what "the latest research shows" to underlie that person and his or her story (temperament), and some encouraging advice about what you can do (character). It's also as though an entire bookstore was shrunk down into each chapter for you to pass through: first go to the fiction section, then the non-fiction section (you might have to look around a bit: biology, medicine, maybe psychology or sociology), and then the self-help section. Other great trios can be snapped into place: narrative, truth, values; literature, science, ethics; mind, limbic system, frontal lobe; or, for those who dare to buck the anti-Freudian times, Ego, Id, Superego.

There's plenty of stuff in the remainder of the introduction to set all the anti-reductionists and anti-biological-determinists rummaging through their bag of counterarguments and counterexamples, and fulminating against Hamer. But if it all sounds like the kind of genetic-determinist myth that needs to be exploded—and it should—it's also the case that this same text already explodes it for us. Later in the introduction Hamer and Copeland tell us that "the genes themselves don't make a baby cry or giggle, or make the difference between a gregarious car salesman and a shy data processor. Rather, the genes control certain aspects of brain chemistry, which in turn influence how we per-

If this all sounds like the kind of genetic-determinist myth that needs to be exploded—and it should—it's also the case that this same text already explodes it for us.

ceive the world and react to that information... Temperament does not come fully formed with a new baby. Instead, the baby is born with the potential to acquire a temperament in response to the environment... So temperament is learned, but not in the way we memorize a telephone number. Rather people 'learn' temperament through *emotional* memory, what most people know as habit." (p. 14)

In other words, while anti-genetic-determinists have gone to some lengths to dispel the concept of the "gene for" something, Hamer and Copeland do that work for them: "One of the most common misconceptions about genetics is that there are genes 'for' things. Some people have the genes 'for' breast cancer, shyness, blue eyes, and

so they must have the disease, condition, or trait. This is what people tend to think when they hear about a gene ‘for’ depression, or a ‘gay gene,’ or ‘obesity gene.’ ...That’s not the way it works.” (p. 19)

Later, in the chapter on “Anger,” they write: “Of all the things that determine whether people will be violent, aggressive, and antisocial, the most important is neither genes nor parenting style. The most important factor is not the type of brain a person has or whether they were abused as children. What matters most is geography... Genes and neurotransmitters and hormones may tip the scales, but people are not robots programmed by genes.” (pp. 123-126)

Are you a little disoriented by all these different and even contradictory statements? You should be. I’ve only scratched the surface here, but I’ve tried to show how to read LwOG in a way that brings the differences to the surface—that brings out the contradictions that the text already contains. All texts contain contradictions—that’s the law of texts—so I’m not saying that LwOG is necessarily bad. My point is that, like the LwOG text,

genetics today depends on these very contradictions: people are programmed, people aren’t programmed. (I know that’s a Big Statement that I haven’t exactly proven, but there’s not enough room here.) Genetics today, especially as it pertains to the kinds of complex behavioral conditions discussed here, also depends on different kinds of narratives to encompass these contradictions, even if they don’t resolve them—especially if the narratives don’t resolve the contradictions.

Whatever message about “genetic destiny” Hamer and Copeland might think they’ve programmed into their book, the text tells a different story. If Hamer and Copeland think people have a “fundamental” “core” “temperament” that’s programmed by the genes, the text de-stabilizes all these concepts at the same time. If Hamer and Copeland think that the new science of behavioral genetics “shows” us the fundamental truths underlying human nature, their text also shows us that many different kinds of narratives are needed to make sense of genetics. It also shows us how genetics will probably never fully dominate or displace other kinds of narratives,

from self-help to fiction, but will enter into new and uneasy combinations with them.

The point is *not* that “it’s all narrative,” any more than Hamer and Copeland’s point is that “it’s all genetic.” The point is not even that narrative is *fundamental* to genetics, even though LwOG would still maintain that genes *are* fundamental, even if they’re not everything. The point, which the text of LwOG demonstrates, is that everything is juxtaposed and doesn’t distill down to an essential truth. When it comes to wonderfully complex behaviors, it’s all *and*: genes *and* spinach *and* pop singers *and* hit movies *and* enzymes *and* words *and* genre conventions *and* bookstores *and* yoga *and* high school reunions *and* neural networks *and*... And fables.

So read *Living with Our Genes*—you’ll learn a lot about how people, genetic science, and books are all put together, at the same time as it shows how they can be taken apart.



Give Your Car a Break Week

from page 1

environmental, safety, social, and so on—and to focus on their own power as consumers and travelers to make a difference.

Sounds right up our individual-choice alley, and it was. It was also an interesting opportunity for participatory community research, which taught us some valuable lessons (which we’ll discuss later).

The Week’s activities included a bicycle tour of Amherst ending in a potluck dinner, a “commuter breakfast” using muffins and juice to bribe folks to ride their bikes, a video about

the automobile industry’s dominance in America called “Taken for a Ride,” a bike repair workshop, and a speaker panel featuring Jane Holtz Kay, author of *Asphalt Nation*, and several other professionals in the transportation sector: the bus system’s Administrator, one of the planners of the hotly contested Amherst parking garage, and so on. The culmination of the Week was an alternative transportation parade down the center of Amherst’s main street followed by a fair on the town commons featuring live music, presenters, and information booths.

It was a huge amount of activity for the small Committee to have organized, and it went off very well—mostly. The “Meet the Planners” session was cancelled for mysterious civic holiday reasons, the bike decorating party before the parade struggled because bikes aren’t allowed in the Community Center building... but overall I was impressed with the Week’s results. Certainly, the parade was the greatest coup: closing the street for even an hour got a lot of people’s attention. Participants stopped along the way for an obstacle

Continued on page 9

Secoya Survival Creates Collaborations

REPORT FROM THE AMAZON FORUM

For indigenous peoples, the environment has to do with all biotic and abiotic elements, ... flora, fauna, rivers, physical space and people all make up one unit. Consequently, when one attempts to assess environmental impact, people cannot be separated out from other biotic and abiotic elements. A palpable illustration of this point of view of indigenous populations is seen in the reciprocity between indigenous peoples and nature, which can be [summarized] in the following relationship: Biodiversity resources exist where indigenous peoples dwell. Where indigenous peoples have been displaced and non indigenous peoples dwell, biodiversity resources are deteriorating.

So wrote Jose Martinez of the Indigenous Territorial Planning Center and the Confederation of Indigenous Villages in Bolivia, in his report to the fourth bi-annual forum of the Coalition for Amazonian Peoples and their Environment (the Amazon Coalition).

The reasons behind the correlation between survival of indigenous cultures and preservation of biodiversity are varied and complex. But it's clear that an environmental movement that ignores the contributions and needs of the people who live in the at-risk region is not only impractical—it actually repeats the patterns of exploitation used by governments and multinationals with whom it is so often at odds. The Amazon Coalition of

By James Oldham

fers a different approach to environmentalism, one that bases the defense of the Amazon environment on the fight for human, cultural and territorial rights of the indigenous people of the region.

The Coalition brings together 40 non-governmental organizations (NGOs) from the U.S. and Latin America in an Alliance with indigenous and traditional people's organizations from the 9 countries of the Amazon Basin —Brazil, Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana, Surinam, and French Guyana. ISIS has recently applied for membership in the Coalition and I took part in the forum held in Washington, DC May 27 through 29.

The conference was a great opportunity to meet and share ideas with people working in many of the same issues that we address through the Secoya Survival Project: responding to extractive industries, designing sustainable development, and seeking the key to environmental protection in cultural survival. I was particularly pleased to connect with a Peruvian woman who has been working for 15 years with indigenous communities struggling with oil development and sustainable alternatives. Another exciting discussion was with the president of the Confederation of Indigenous Nations of the Ecuadorian Amazon who described that organization's efforts to develop an indigenous university that attempts to train students to understand the world from two perspectives: the traditional Amazonian knowledge system and the dominant cosmopolitan (so-called "western") knowledge system.

As the group (about 60 people attended, roughly half of whom were from the Amazon region) discussed plans for the next two years, I was struck by the timeliness of the ISIS

decision to join the Coalition. We have been in touch with the Coalition for a number of years and shared information with their members, particularly regarding the struggle with oil development. Now, having established the SSP and our relationship with the Secoya people, ISIS sees joining the Coalition as an important opportunity to combine forces with others and learn from their experiences. What I was pleased to discover in Washington is that there is a lot ISIS and the Secoya Indigenous Organization of Ecuador (OISE) have learned in our collaboration that can benefit other partners in the Coalition.

This opportunity to contribute was apparent with the selection of five areas of focus for the coming year. Three are well established pieces of the Coalition's work: efforts to promote and take advantage of legislation defending indigenous rights, campaigns for environmental protection, and defense of human rights. The two other areas that indigenous organizations in particular felt needed attention were sustainable development and education & training. Although the scale of what is possible for this multinational coalition is very different from what we can do in Secoya territory, the theme was very familiar: indigenous communities are happy to have collaborators on campaigns to defend the environment and fight for legal rights, but they are very aware that just as people can not be separated from the environment, it is equally impossible to separate the economic and educational needs of a community from its struggle for legal and cultural rights. Much of the success of the SSP comes from our efforts to balance these needs at the local level; perhaps one of the contributions we can offer the Coalition is to help it do the same at the international level.

Indigenous Aquaculture Grows

The Indigenous Aquaculture Initiative (IAI) has benefited from a new collaboration, and there are exciting possibilities for the future. Ian MacCallum, a Canadian Executive Service Organization consultant and expert in aquaculture training and development and fish nutrition, spent October 1998 in Ecuador at the request of our Secoya partners, appraising their aquaculture work. He was impressed enough with the IAI to propose an on-going collaboration as a pro-bono consultant to the SSP and he returned to Secoya territory in March to support our pond building work in the village of Siecoya.



This map shows 22 fish ponds in the village of San Pablo as of last October. We now have nearly fifty ponds in five villages.

The importance of traditional local knowledge, emphasized by the SSP, was another key theme of the conference. As we discussed the need for capacity building—usually understood to mean training indigenous organizations in skills such as working with media, use of computers, languages (especially English), and organizational skills—one of the indigenous leaders asked which culture really should be training which? “We should train them [the non-indigenous cultures.]” He argued that the indigenous cultures have the more profound knowledge: how to live in the world without destroying it.

For ISIS, the Amazon Coalition offers the opportunity to consider many of the same issues we deal with in the SSP on a much wider scale. Just as other organizations work to develop legal strategies, organize campaigns or devise economic plans, we would like to help coordinate the regional de-

Ian has suggested Secoya territory as the site for a brood-stock project dedicated to providing fingerlings for aquaculture throughout the region while preserving the genetic stock of indigenous Amazonian species. We are jointly pursuing funding and contacting potential collaborators for the next phase of our aquaculture work.

Recent workshops have focused on techniques for capturing wild fish to stock in ponds. Here a man uses a scoop net to collect recently hatched fingerlings which swim near the surface.



One goal of the IAI has been to improve the in-and outflow systems of ponds to make management easier and to protect dams from washout.



velopment of what we have sometimes called “science for survival.” Combining indigenous knowledge and cosmopolitan science this science would address the two-way nature of learning by seeking both sustainable solutions to the development needs of indigenous communities and new approaches to the universal need for environmental protection and sustainable technologies.

Diversity of knowledge, and exchange within this diversity, offers an

important resource base for addressing many environmental and social problems. Cosmopolitan science and technology can benefit (and perhaps even lose some destructive tendencies) from an exchange with more local, particular knowledge systems. As the focus of the SSP broadens we anticipate exciting new opportunities to explore these possibilities.

COORDINATING A RE-

Continued on page 10

NTEN Vision

from page 1

satisfy regulatory requirements and hardly take into consideration the needs and concerns of the surrounding communities and stakeholders.

Over the past 4 years, ISIS has been developing mechanisms to help citizens participate more effectively. In 1997 we organized the Northeast Federal Facilities Cleanup Workshop (NEFFCW) (see our December 1997 ATF issue or check out the article online at <http://isis.hampshire.edu/mil/nffcw97.html>), which was attended by scientists, federal regulators, DoD personnel, and community activists. We have pioneered new methods for scientist/citizen interaction at Westover Air Reserve Base in neighboring Chicopee that enable concerned citizens and stakeholders to understand the contamination problems and risks to human health and the environment. ISIS has done this through participation in the Westover RAB, in collaboration with a local environmental group, Valley Citizens for a Safe Environment. Thus, citizens have been better informed and are able to better participate in the decisions that affect their health and safety.

Now ISIS is working to create NTEN by emulating this process and the ideas behind our work at Westover across the country. The reason for the NTEN premise stems from the history and social context behind military contamination:

- Contamination caused by unregulated and unchecked military activities is one of the biggest environmental and economic challenges facing the country; the military has been and is by far the largest polluter in the U.S. Even conservative estimates have determined that cleaning up the legacy of the cold war will require more environmental scientists than those

graduated in all disciplines over the last 50 years. The cost of cleanup is calculated to be between \$200 and \$400 billion at the most conservative estimate; or more than the entire Manhattan project, corrected for inflation since the end of World War II.

- There is a marked lack of trained environmental scientists to address these problems, with this trend expected to continue for at least 30 years, so citizens and public groups desperately lack independent means to assess environmental impacts of cleanup.
- There is a shortfall of an educational framework for the training of future environmental scientists that focuses on the role of science and society and values imposed on society. Scientists today are not trained to communicate with non-scientists and laypersons, like the stakeholders and RAB members described by the FFERDC. Furthermore, current hierarchical and directorial scientific training, as present in many colleges and universities, does not instruct scientists and students about the values inherent in science and scientific research. As such, many of today's scientists are not able to communicate effectively with affected citizens or to listen to their concerns and suggestions and act upon these.

- Communities affected by DoD and DOE operations, including citizen advisory boards, such as RABs, often lack official or informal technical assistance or expertise to effectively assess and evaluate the risks to human health and the environment.
- The effectiveness of institutionally sanctioned fora for community participation at DoD and DOE installations, such as the ones recommended in the FFERDC, is diminished by a lack of technical expertise/knowledge and information exchange among stakeholders and advisory board mem-

bers.

After 6 years engaged in DoD environmental cleanup processes, ISIS has come to appreciate the great potential available in tapping into the knowledge, experience and expertise of community members. These are people who worked and played at the installations, who have known the base's practices and problems handling hazardous substances. These experts include local college professors, scientists, engineers, and self-educated citizens (that is, the ones that do have the patience to read through the hefty volumes of reports regularly churned out by military environmental contractors). NTEN seeks to network these citizens to exchange information so they can be more effective in their RABs, since many of the problems facing military installations are similar (such as a plume of contaminant entering the groundwater).

NTEN's goals are ambitious and will span the next several years. They will include pilot course projects—to reframe and conceptualize a rethinking of environmental science curricula (in the way ISIS has collaborated with 5-College courses in the past), production of a website and electronic mailing lists, and most importantly, hosting regional conferences to start NTEN, all with advice and assistance from like-minded organizations like the Center for Public Environmental Oversight (CPEO), the Military Toxics Project, and Arc-Ecology in San Francisco. For additional information, check out the NTEN concept paper online at <http://isis.hampshire.edu/mil/nten.html>.

NTEN has a great deal of work ahead, in terms of cleanup at military facilities and in terms of reconstructing democratic science. We hope it can tackle both at once.



Car Week

from page 5

course, the ribbon-cutting on the town's new bike lanes, and a contradance with live fiddle music (picture promenades and dosey-do's from curb to curb, right across the yellow lines). Drivers and pedestrians alike who hadn't known about the event stumbled upon quite a spectacle: hundreds of people on bikes, rollerblades, skateboards, or walking with strollers, taking over the middle of town. It was a thought-provoking gesture, questioning why we choose to allocate so much space at the center of our communities for the anonymous bustling of automobiles.

There were, of course, a few shortfalls on the Week. Many of the smaller events were peopled by the same core group—most of whom are part of the Earth Day Committee or were Week planners. The reasons are many: publicity remains a struggle (though friendly reporters did mention the events in several local papers), Amherst has dozens of activities during every week in spring, and sustainable transportation simply isn't a popular topic with our SUV-happy so-

cietry. As the Week becomes established year after year, it will gain public footing just as Earth Day itself has (and with visible and directed activities) and reporters will have more and more reason to cover it seriously. With practice, the planners will learn which events to emphasize and which to shelve.

Another limit on the Week's success was that it took place only in Amherst. While the local focus was a practical choice for the resources of the Committee organizers, the region boasts several larger cities, including Northampton, Greenfield, and Springfield, which could significantly expand the audience of the native transportation events. Particularly for targeting the single-vehicle commuters, inclusion of the many large businesses in Springfield in employee education and incentive programs could make a big difference. While this year's Week had a "Com-

muter Challenge" to encourage businesses to rally their workers, it was under-promoted and not very widely taken. One of the clearest goals for next year is to coordinate with groups in these other cities to expand and diversify the events of the Week and to emphasize the choices daily commuters make.

It's easy to pick at the shortfalls, though, and in truth the series of events this April were the biggest round of



Stilt-walking clown "Stella the Fairy Godmother" leads the alter-native transportation parade down Amherst's car-free main street

public engagement in sustainable living that Amherst has seen in over twenty years. Give Your Car a Break Week has outstanding potential for bigger and better things, and ISIS will be part of that growth.

Our involvement with Give Your Car a Break Week has also served to connect us with members of the community, which serves ISIS's mission while providing opportunities for other collaborative projects. Our main community contact has recently proposed developing Eco-Teams based on the OECD-praised Global Action Plan program and working with the academic institutions on sustainable lifestyle education and system management. We expect to have a great deal more news on these leads for the next issue of *ATF*.

We're also exploring other new directions for the project. One of the most interesting subjects is the restruc-

turing of the Massachusetts utility regulations, particularly the section of the legislation which calls for towns to form energy "aggregates" or co-ops which will buy electricity for the homes and businesses, write an energy plan for the whole town, and, if approved, receive State funding for implementing the plan. ISIS will study the aggregation process as it happens, and will work with sustainable energy providers to facilitate the best possible energy plans.

Another direction involves the marketing of sustainable products and services. We'll be working with marketing experts from the business and academic worlds to create effective

promotions for sustainable personal choices as a response to the massive advertising of consumption. Along with our studies of successful sustainable choice cases and interviews of experts about energy culture in America, we have ample exciting work to keep us busy.

Unfortunately, funding has not materialized as easily—no surprise. The Institute's reserves continue to support the project in its startup phase, but that won't last forever. As we keep pursuing opportunities, any leads or support you can offer will be very gratefully appreciated. Please consider using the form on page 11 to make a contribution to the project.

Secoya

*fr*SPONSE TO OIL DEVELOPMENT

MENT

Project Coordinator Sonia Lindop has just returned from Ecuador where she has been planning, with OISE (the Secoya Indigenous Organization of Ecuador), and two other NGOs (the Center for Economic and Social Rights, and Accion Amazonia), strategies for support of Secoya negotiation with Occidental Petroleum Company (OXY).

After a silence of over six months OXY recently contacted OISE to re-open discussions around their proposal to drill three exploratory wells in Secoya territory. This proposal was tabled after OISE denounced OXY's attempt to split the Secoya and negotiate with leaders of one village, as reported in the previous issue of ATF. In May the OISE Congress voted to consider OXY's renewed proposals but they passed a series of resolutions intended to ensure a fair, orderly and respectful process. OISE also approved a code of conduct for negotiations which they have proposed to OXY.

The code's main points include

- establishment of the Ecuadorian constitution and International Labor Organization Convention 169 (rather than Ecuador's oil production laws) as the basis for the dialog.
- designation of a negotiating body made up of representatives from both Oxy and OISE, plus a number of outside observers.
- rules of engagement including the requirements that all communications be in writing and all meetings have a previously agreed agenda and be scheduled in a manner to allow participation of all OISE representatives

and advisors.

- a two part process that requires the exchange of information and enough time for OISE to evaluate OXY's proposal prior to the actual negotiation.

None of these points are particularly radical. But until now, they have *not* been the basis for relations between OXY and OISE, nor for most relations between oil companies and indigenous communities anywhere in Ecuador. OISE has taken a very important step in trying to establish these ground rules before entering anew into a dialog with the oil company.

Another remarkable step OISE has taken is to write into the Code of Conduct that an agreement with OXY will only be valid if approved by three quarters of the OISE assembly. This

OISE has taken a very important step in trying to establish these ground rules before entering anew into a dialog with the oil company.

seems to be an attempt to correct the damage caused when past decisions left a sizable minority feeling ignored. While remaining within the framework of a democratic rather than consensus decision making, it incorporates many of the principals of the latter, especially since the Secoya tell us that they will not gather the assembly to vote on a proposal until each village has already discussed and approved it.

OISE has established a team of four negotiators, made up of the organization president and the presidents of each of the villages the organization represents. They have written to OXY that "When Occidental informs OISE in writing of its acceptance or rejection of the Code of Conduct... we will establish a date for a meeting in which

the company can present its position to the assembly of OISE. Once there is agreement on the Code it should be signed by both parties and OISE's international advisors [Dr. William Vickers of Florida International University, Dr. Theo-dore Macdonald of Harvard University, and ISIS's SSP staff] will be so informed. Until Occidental makes its position known regarding the code of conduct, OISE will not begin the process of negotiation."

OISE's resolve is already being tested. After receiving OISE's proposal OXY asked for a meeting to describe their proposal; discuss the code of conduct, and begin negotiations, including compensation for the Secoya. The invitation offered very short notice (ISIS and other observers had 6 days warning) and no background on the proposals to be discussed. OISE agreed to meet but only to discuss the code of conduct.

On the day, OXY tried to discuss work in Secoya territory without giving OISE any time to first evaluate their proposal. OISE's negotiators refused but did agree to listen to a description of OXY's plan. OXY displayed maps and described scenarios for finding oil and in the case of a dry well. However, when the Secoya asked that the information be put in writing to share with their community and advisors, they were told that "geologists don't write much, we prefer to talk and show images." The OXY geologist did offer to explain the plans again to anyone.

Rather than responding in writing to OISE's Code of Conduct, OXY tried convince the Secoya that there was no need for it. They argued that time is short and mustn't be wasted haggling over a code. They insisted that "we don't want you to see us as enemies." The Secoya representatives responded that "we cannot talk without the code. It is a sign of respect between us."

In the end, OXY had to accept that there would be no dialog without a code of conduct. They agreed to provide written comments on OISE's proposed code and the two parties arranged a new meeting for early July. We await it with interest.

In the meantime, ISIS is helping OISE prepare for the negotiations. We are continuing a collaboration with the Quito-based Center for Economic and Social Rights (CESR), to provide the Secoya with legal advice, ensure they are aware of their rights, and help them present their case to OXY. ISIS and CESR collaborated with OISE on the preparation of the Code of Conduct and we are helping OISE prepare other documents and analyze information from OXY. We are also preparing a joint workshop to help OISE cope with the wide range of advice they are getting (often unsolicited) from groups

ranging from environmentalists ("just say no") to people in the Ecuadorian government.

ISIS has also begun working with Accion Amazonia, another Ecuadorian NGO formed recently in response to the failure of environmental organizations to offer sustainable alternatives to the development they oppose. We have asked Accion Amazonia to facilitate a week-long participatory environmental and cultural impact study with the Secoya in August, to allow them to evaluate the changes OXY's proposals could bring to their lives. The team will include a former oil worker, representatives of indigenous communities who have lived with oil development in their territory, rain-forest ecologists, and an anthropologist. SSP coordinator Sonia Lindop, our fish and aquaculture consultant Marco Silva, and I will also participate.

ISIS thanks those who have given generously since December 1998 (donors over \$100 are in bold):

Karen Andrews*
Sarah Auchter Miller
Olivia Bernard
 George Bird
 George Cobb
Bonnie Crispell*
Jeffrey Dean
Arlene & Howard
Eisenberg
 Barry Elson
Joan Fujimura
 Deborah Fulcher*
 Robert &
 Hwei-Ling Greeney
Ellen Grobman
 Janet Penelope Gunn
William Guttman
 Robert Hinrix
 Dale Hughes*
 Soren Hvalkof
Brian James
David Kaplan
 Casey Krone

James Levey
Phil Lister
 Oren Lyons
Michael Mann
Ian McCallum
 Robert McCarthy
Lucy McFadden
Charles Merrill
The METTA fund
Lynn Miller
 Polly Parkhurst*
 Robin Pfaff*
 Max Ross &
 Ruth Ripnitz
 Ruth Skoglund
 Diccy Thurman
William Torcaso
Joseph Turner
 Ernst von Glaserfeld
David Wiener
Sam Wiener
 Mingda Zhao
 [anonymous]

* Gave to Envir. Health Coalition of Western Mass

Please use this form to make a contribution to ISIS. Your donation is very gratefully appreciated!

Yes, I support ISIS! Here's my tax-deductible contribution.

Name

Phone

Address

City

State

Zip

E-mail

I want to be a(n)

- Sustainer (over \$1000) Supporter (\$500 - \$1000) Associate (\$250 - \$500)
 Friend (\$100 - \$250) Member (\$35 - \$100) Student/low-income member (\$10 - \$35)

Please use my contribution for:

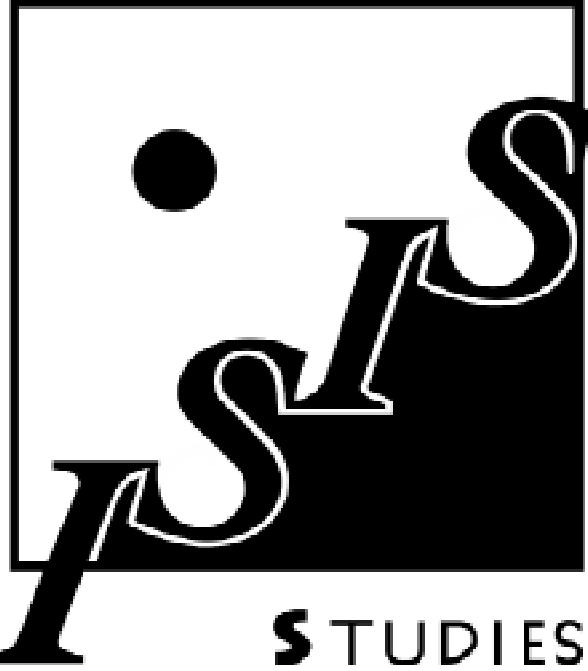
- Secoya Survival Project Program in Science & Culture Multiple Chemical Sensitivities
 Military Waste Project Sustainable Energy Project Other _____

Please make your check payable to ISIS. Thank you very much for your support.

I'd like to volunteer with ISIS. Please contact me.

Sorry, I can't contribute at this time. Please keep me informed.

THE INSTITUTE FOR SCIENCE & INTERDISCIPLINARY



ISIS

036003

Prescott D-1
Hampshire College
Amherst, MA 01002

**Inside this
Issue:**

The Sustainable Energy Project
rolls up its sleeves.....Page 1

MilWaste's National Technical Experts Network reflects....Page 1

Mike Fortun walks us through *Living With our Genes*.....Page 2

The Secoya Survival Project grows
with collaborations in Ecuador
.....Page 6

Your chance to pitch in for ISIS
.....Page 11

Non-Profit Org.
U.S. Postage
PAID
Permit No. 3
Amherst, MA 01002