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Researchers at Tech institute wade deep into fight for environment

By Matthew McGowan | AVALANCHE-JOURNAL

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The fight for the environment takes many forms.

A few might chain themselves to trees or boycott certain chemicals. Others recycle. Some adopt a highway.

But shrouded behind all these much-hyped efforts are people like Ron Kendall and Phil Smith.

To these researchers at Tech's Institute for Environmental and Human Health, going green doesn't conjure visions of separating aluminum from plastic or planting a tree.

"You guys see the emotional side of environmentalism," Smith said. "This is the science side."

Smith, an associate professor of environmental toxicology at the institute, watched Wednesday morning as a group of post-graduate students collected frogs from a playa lake just yards from the green lawns of a middle-class neighborhood in Southwest Lubbock.

He explained how they'll bring the samples back to their lab at the Reese Center and examine the tadpoles they're sure to spawn.

Their chemical composition will give the students an intimate glimpse into the critters' fragile ecosystem - it might also help unveil why entire amphibian populations across the globe are dwindling.

They're quiet by day, Smith said, but when darkness falls these lakes erupt in a symphony of life unheard anywhere else in the region. Birds, insects and amphibians descend on the shallow pool. Smith's students, with their nets and clipboards, are never far behind.

This is what happens behind the scenes, where going green doesn't involve picket lines or Earth Day T-shirts - just data and evidence.

Tech's institute is among only a handful in the world that focus entirely on the potential poisons pulsing through the Earth's arterial waterways, sifting through its soils and settling in its wildlife. The whole field didn't emerge until the last 30 years or so.

In fact, it's so new that Kendall, the institute's director, was one of the founding fathers of the field that studies how man-made chemicals are affecting the world's animals.



Merissa Ferguson/Lubbock Avalanc / Merissa Ferguson

Stephanie Plautz, left, and David Kimberly, both doctoral students at Texas Tech's Institute for Environmental and Human Health, look for toads that are mating Wednesday morning in a playa lake in Southwest Lubbock. The students will later check the tadpoles created by the toads for any contamination that could be in the water.

You guys see the emotional side of environmentalism. This is the science side.

Phil Smith

Texas Tech Institute for Environmental and Human Health

World's top 10 most polluted places (2007)

- Sumgayit, Azerbaijan
- Linfen, China
- Tianying, China
- Vapi, India
- La Oroya, Peru
- Dzerzhinsk, Russia
- Norilsk, Russia
- Chernobyl, Ukraine
- Kabwe, Zambia

Source: Blacksmith Institute

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Nothing of this sort existed when he was an undergraduate studying chemistry and biology at the University of South Carolina in 1970. It was the same year of the first Earth Day celebration, and America was only beginning to grapple with its own environmental conscience.

The nation could no longer ignore the destruction.

Kendall once watched as the Hudson River ignited in flames - oil ran through it, he said.

"Back then, the environmental movement had only just started," Kendall said. "People were starting to realize our rivers were getting polluted. We had a lot of Superfund (pollution-ravaged) sites. Looking back, it's a good thing it did."

But science had yet to establish the tools to combat the pollution.

A professor once told Kendall he'd make an excellent doctor, a profession to which most of his classmates aspired.

"I don't want to go to medical school," Kendall remembers telling the professor. "I want to be an environmental scientist."

What he went on to accomplish in his career took him to Clemson University, Virginia Tech and Western Washington University, where he built the nation's first wildlife toxicology program.

Tech recruited Kendall in 1997 to establish the institute, which today is the largest such academic-based program in the world, with roughly 55 students from across the globe. Kendall also writes extensively about the science. He and his staff recently compiled a seminal textbook on wildlife toxicology that will hit shelves in May.

There are only two books of its kind - the first being one they published several years ago; it quickly attracted worldwide demand and sold out.

The institute offers a variety of master's and doctoral degrees in environmental toxicology, and its graduates have never been in higher demand, Kendall said.

"I've not seen a diminishing or drop in demand for the people we train since I've been doing it," he said.

Looking back, Kendall says America has taken significant strides to reduce its environmental impact. Today's rivers are dramatically cleaner. Chemicals today are less harmful, and environmental awareness has grown to heights he couldn't fathom just a few decades ago.

"I think we've made a lot of good decisions," he said, "but when you look on a global scale, especially the developing world, there are huge issues."

Smith agreed. Most of the contaminants in Lubbock's playa lakes are pesticides that had trickled down from the surrounding farmland.

He said their manufacturers today have fine-tuned their products to do more with less and with a minimal impact on peripheral animals and plants.

"You can't be in business now and not care," Smith said. "There may have been a point in history where you could do anything you want, but that's not the case today."

But, he continued, with every reduced threat comes a new one.

Scientists have yet to fully understand the possible impact of many new chemicals, Smith said, especially the now-ubiquitous flame retardants in most products.

"It's a new generation of persistent contaminants that people are



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unaware of, to a large extent," he said. "I see those as the future issues that are just entering the conscience of environmental groups and agencies."

And beyond American borders is wide-scale pollution much the same as that of the United States circa 1970.

Developing countries are improving their quality of life at the environment's expense, Kendall said, just as the United States had once done. Striking a balance between the two in the emerging countries is as imperative as it is tricky.

"As the planet's population gets bigger, we have to generate more food," he said. "It takes chemical support to sustain us. At the same time, we have to sustain our biodiversity. A lot of it is about education. If people aren't educated on these issues, it's hard to make good decisions."

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Reader Comments

Posted by: [jimfos](#) at Apr. 25, 2010 at 9:19:18 pm

Reassuring that somethings never change. Born in Lbk, schooled on Lbk (and elsewhere), kids in Lbk (for moment). However...when there are more Reader Comments about STDs, COED GETTING SHORTS PULLED DOWN, TEA PARTY, etc. than about Environmental Research at Tech Institute (none), Earth Day (none), FAA Frequency Changes (none) or other issues that reflect/impact world issues, I am glad to have voted with my feet and gone to more enlightened areas. I will monitor news from time to time just to see if attitudes ever shift to take advantage of potential offered by researchers and others that still stick it out there. And Tech Tier One? Against all odds. Takes more than fund raising for athletic program.

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