

# DOLLARS AND SENSE

## Local dairy cow piles to generate additional electricity for farmers

By Charlaine Davis

■ The Lumberjack

Humboldt State U.

When life gives you cowpatties, make electricity.

Humboldt State U. engineering Professor Peter Lehman and a group of four students are doing just that. If the group's project is successful, local dairy cows may soon be helping to power their own farms.

The idea to build a working biogas digester on a local farm grew out of Lehman's developmental technology class.

"We talked about the technology in class and some of the students were interested in pursuing the areas as thesis work," Lehman said.

The project is still in the planning stages, with decisions about materials and final design yet to be made. The project also needs some cooperation from nature to get started.

"We are planning to start when manure dries out," Lehman said. "We hope to have it built by the end of summer."

Lehman said the goal of the pilot project is to get other dairies interested in the idea.

"We want to show them that it's not a mysterious technology. It's simple, easily understood, easily serviced and it works." The idea of converting waste into useable fuel may be new to Humboldt County, but is common in places like China and India.

"It's simple technology, not high tech," Lehman said. "We're not talking computers and guided missiles."

A digester starts with an airtight concrete trough with a rubber top and a septic tank. Add a pump to get manure into the trough and a system to extract the resulting gas and sludge, and that is a simple digester.

Bacteria in the trough breaks the manure down into two parts, biogas and sludge. The biogas consists of methane and carbon dioxide, which can be burned in the same way as natural gas. It can be used to heat buildings or water, or as a fuel for lanterns and gas-powered electrical generators.

Lehman said that most farms use electricity for all of their energy needs, including water and household heating. Because fuel is burned to create electricity, Lehman said heating can be done more efficiently by burning the fuel directly.

For John Mason, whose Arcata dairy farm will receive the trial-size digester, the energy savings is a big incentive. Mason estimated that the electricity to

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U. of Kansas students will help NASA formulate human habitats in space.

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U. of Southern Florida officials suggest ways to thwart theft and aid recovery, including multiple hidden identification markers.

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#### Jeans for Africa

A U. of North Texas, Denton student takes used clothes home to Africa.

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ANDREW CARROLL, THE SHORTHORN, U. OF TEXAS, ARLINGTON

U. of Texas, Arlington students Troy and Ty Kubin founded a profitable business with their slithering friends.

## Snakes alive

### Reptilian interest sparks business ideas for brothers

By David Van Meter

■ The Shorthorn

U. of Texas, Arlington

An idea slithered into the mind of general studies senior Ty Kubin while he was in the Life Science Building of U. of Texas, Arlington, two years ago and he just couldn't shed it. The world was in dire need of a snake den, a small, plastic shelter used for reptiles, amphibians or fish.

Ty, along with his brothers Troy, a business management senior, and John, a tire store manager, hatched the den concept into Executive Marketing International, which centers on distributing an assortment of snake dens, aspen bedding and an oasis for pet bedding and drinking.

EMI has matured from a \$4,000-a-week business run out of

a house into a sizable warehouse firm that the brothers say will boast \$1 million in sales this year.

"We moved out of the house when we couldn't get to the kitchen," Troy said.

The company's success stemmed from "looking at the products out there and gaining knowledge of the product needed, and from utilizing our resources," Ty said.

Utilize they have. A prototype mold that should have cost \$3,000 was obtained for \$700.

"We knew a friend on the inside who told us how to make the mold and then we did it," Ty said. Friends also helped them get free advertising printed and build an aspen-bagging machine for \$1,500 instead of \$10,000.

Gaining product knowledge wasn't too difficult, considering

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## Working abroad provides different perspectives of foreign countries

By Robyn Dagget

■ The Lumberjack

Northern Arizona U.

and Norma Hofmeister

■ Collegian

Tarrant County C.C.

Living and working in a foreign country is an idea that fascinates most people, and overseas opportunities for employment are readily available for college students through various agencies.

The Council on International Educational Exchange helps students find jobs in the United Kingdom, Ireland, Costa Rica, New Zealand,

Jamaica and the Federal Republic of Germany.

In each country, a national student organization helps students find jobs and lodging. According to the exchange, 5,000 students participated in the program last year, and the average search took three days.

Jobs range from the unskilled — waitress, chambermaid, farmhand or cook — to semi-skilled office work. Students are allowed to work at any job they can obtain.

Great Britain is a popular destination for many students, according to exchange literature. The "Work in

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## It's not always easy collecting the rent

By Lisa Seymour

■ Kansas State Collegian

Kansas State U.

For some students, the end of the semester may mean tracking down an ex-roommate who didn't pay a dime on the bills.

Wade Whitmer, director of the Kansas State Consumer Relations Board, said recovering money is difficult, particularly when the defendant lives in another county.

Usually students who live together split the bills evenly. The roommates pay a deposit for most services, but these companies rarely let all roommates put

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