# The Baily Tar Heel

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### **UNC's cogeneration plant**

The cogeneration plant, which opened in 1940, is responsible for providing energy to campus. The plant distributes electricity using coal and progressive techniques and is the kingpin of a network of campus energy facilities that keep UNC running. Leaders constantly are evaluating ways to reduce cost and improve efficiency.



Coal, the principal fuel for the plant, is the most economical and available fuel. mostly from Kentucky and West Virginia three times a week. Once received, the coal is unloaded in the Coal Handling Facility and put on a conveyor belt to the boiler room for use or the 5,000 ton silo for storage. The plant uses 200 to 450 tons of coal a day depending on the season and energy load demands.

TURBINE



The high-pressure steam from the boiler es through a series of rotating blades in the turbine, reducing the pressure of the steam. The bulk of this low-pressure steam then passes through tunnels or pipelines to campus; however, some steam may pass through a generator that extracts energy from the steam, producing a by product of electricity



**BOILER ROOM** 



The boiler room contains two circulating fluidized bed (CFB) boilers that produce high pressure steam. Coal and water enter into boiler and undergo temperatures ranging from 1,450 to 1,800°F. The result is a super-heated, dry steam that averages 900°F and 1,275 psi, rain producing elements like sulfur dioxide and nitrous oxides

CAMPUS

The low-pressure steam passes through tunnels and pipeli to campus where it is used for heating, cooling, domestic hot water, humidification, sterilization, cooking and cleaning on campus. The cogeneration process continues on campus as the m, after energy extraction, returns from pipelines to the eneration plant as condensate. The condensate then is used as feed water for the boilers as the process cycles through once again. Catching the used steam on campus and returning it to the plant separates UNC's cogeneration facility from others and greatly increases the plant's overall energy efficiency.

allowing more energy to be efficiently generated from the process. The CFB boilers allow the plant to be energy efficient and environmentally friendly as well by reducing the emissions of acid

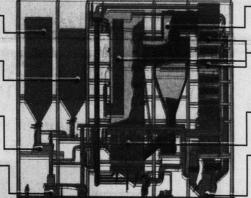
#### INSIDE THE BOILER ROOM

The boiler room is six stories tall and contains two circulating fluidized bed (CFB) boilers. These boilers typically operate between 1,450 to 1,800°F to produce high pressure, dry steam that is environmentally friendly, economically friendly and energy efficient

coal bunkers hold the coal to be burned in the er. Coal is the plant's primary fuel source for

Coal and limestone are fed into the crusher by the feeder.

device crushes the coal and limestone into Il particles and ultimately a powder. This allow poiler to operate at lower temperatures which assess efficiency and reduces the amount of



SIDE VIEW OF ROOM

Cyclone separator
The cyclone separates larger coal particles from small particles and ash. Larger particles fall to the bottom while the smaller particles or flue gas goes on to the

Superheater 1, 2 and 3 This series of heaters extracts more

PA and SA fans
These fans continuously push air through the boiler to assist in the movement of particles and materials from one phase to the next. This air is heated air, which also increases the efficiency of the process.

SOURCE: UNC ENERGY SERVICES



### PHOTOS COURTESY OF SAMANTHA LEVY AND UNC ENERGY SERVICES. GRAPHIC BY KURT GENTRY

BY COLIN CAMPBELL

Most students have no idea how it's made. Few people on campus think about how much they use. But it cost the University \$56 million last year.

It's energy, and it keeps UNC running in several different forms — steam, electricity, chilled water and natural gas.

Officials say they are making a con-

scious effort to improve the efficiency of campus energy and implement conservation efforts

By using new technology to produce and distribute energy from the cogene-ration plant and chilled water plants, the University is cutting costs and reducing

its impact on the environment to the plants - new buildings on cam-

pus are being designed for efficiency, and older buildings are getting upgrades.

**Generating power** 

The cogeneration plant, located on Cameron Avenue, produces steam and s impact on the environment.
And the improvements aren't limited

a sizable percentage of UNC's electricity and has received accolades from the Environmental Protection Agency for

This is one of the cleanest coal

facilities you'll come across," said Allen Johnson, plant manager. "We do a hell of a lot to minimize our environmental

The plant maintains a close relationship with Duke Energy, which supplies

SEE ENERGY, PAGE 5

## Board cements cap on uition

#### Student leaders lament lack of input in process

BY ERIC JOHNSON

The UNC-system adopted Friday a detailed set of tuition guidelines likely to have a far-reaching impact on students and their parents during the next four years.

The plan, approved unanimously by the system Board of Governors, puts a 6.5 percent per year cap on in-state undergraduate tuition hikes.

INSIDE

Student leaders and officials have unique relationship PAGE 6

of the tuition policy overhaul just days before it That left some won-

Yet many student

leaders, to say nothing of average students, learned

dering about the health of a process meant to incorporate student opinion in university decisions.

Derek Pantiel, president of the system Association of Student Governments, summed up his frustration before last week's vote.

"This is my first tuition policy task force meeting and my last," he told a gathering of student leaders. "I wish I had been in on these meetings last year."

Representing students in system-level

olicy discussions is a core responsibility of the ASG, and former President Zack Wynn was involved in the earliest stages of the

We rely on the student representative to the Board of Governors," said Rob Nelson, the system's vice president for finance. "They were given a place on the tuition task force.

But a combination of leadership transi-

tions and bad timing caused the student voice in that critical debate to taper off. System President Erskine Bowles put the tuition task force on hold shortly after taking

office in January, saying he wanted time to study the issue and weigh in. In April, while the task force remained dormant, Pantiel was elected president of the ASG.
"The (tuition) discussion had dropped off

long before Derek came along," Wynne said.
"It just kind of stopped, and they never put y sort of timeline on it."
Pantiel and other ASG officials com-

plained that they were given little informa-tion about the task force, which left them scrambling for a response when Bowles brought forward his plan two weeks ago. But Wynne said there simply wasn't much information to share.

"We didn't sit there and go over it because there was nothing to go over," he said, noting that Bowles essentially took control of the process when he took office.

Still, some information about the propos-al was available long before Bowles officially unveiled his plan, and student leaders were told about it

Forrest Gilliam, student body president at Appalachian State University, e-mailed the ASG's council of student body presidents in

SEE TUITION, PAGE 5

# Families make home at fair

BY MONIQUE NEWTON AND NICOLE NORFLEET STAFF WRITERS

In its opening Friday and Saturday, the N.C. State Fair drew almost 150,000 people looking to enjoy festival staples such as oversized turkey OUT AT THE fair

> Ferris wheel. But behind the fair's festivities are a handful of families who have made feed-

ing and entertaining the N.C. masses their family traditions.

#### **Mills on Wheels**

Wearing a patterned vest and matching pants, Steve Mills of Marion, Ohio, grinned at the crowd Saturday and kneeled

while his 19-year-old daughter, Michelle, climbed on his shoulders.

His 15-year-old son, Tony, who was holding the family's poodle, climbed on top holding the family's poodle, climbed on top of Michelle's shoulders and more than 100 onlookers watched the Mills family tower legs and spins on the step onto a unicycle.

"I dedicate this to my mother — who said I could never support my children," Steve Mills said just before he began traveling toward

SEE FAIR FAMILIES, PAGE 5



Doug Trantham plays a banjo at the N.C. State Fair. Trantham's family makes these traditional instruments. A hoops dream Editor's note: The Daily Tar Heel asked senior writer Gregg Editor's note: The Daily Tar Heel asked senior writer Gregg Found to attempt to earn a spot on the UNC men's junior varsity basketball team to offer insight to a process that most don't get to see. Found will write a daily diary of his experiences until the roster is announced on Wednesday.

BY GREGG FOUND

It's hard to tell from the upper deck, but walk out onto the Smith Center floor and you feel like you're in a blue

Roman Coliseum.
You're surrounded. There's nowhere to escape once you're on the main floor. Everybody is watching.
Then again, maybe you're just feeling the pressure of JV

SEE TRYOUT, PAGE 5

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**BODY BELIEFS** Groups to promote healthy body image today in the Pit

**HEALTHY OUTLOOK** UNC to use grant to study Latino health

A LITTLE TASTE A Southern Season celebrates N.C. food, culture



#### city | page 4

**NATURALLY FUN** Friends of Bolin Creek hold a festival Saturday to raise money and awareness of the need to preserve the Bolin Creek corridor.

campus page 7

#### **CUTTING THE FAT**

The Faculty Council hears about the University's involvement in a UNC-systemwide effort to increase operational efficiency and cut costs.

#### this day in history

#### OCT. 16, 1999 ...

A female housekeeper is attacked in an attempted sexual assault in the Student Union, marking the third campus attack on a woman since the beginning of the semester.

#### weather



police log calendar games sports