

WEATHER

TODAY: Mostly sunny; high mid-40s  
WEDNESDAY: Cloudy; high mid-50s

NIGHT FIGHT: Safety on campus goal of march .....CAMPUS, page 3  
VIOLATING RIGHTS: Latin America cited for abuses.....WORLD, page 5

IN TOWN

VOTE TODAY!!!

# The Daily Tar Heel

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## T.U.E.S.D.A.Y Up Front

### Computer science department enters realm of virtual reality

By Ginger Meek  
Senior Writer

Grasping the primal forces of nature — a constant struggle for the scientific mind. It began with the wheel and has progressed through the birth of electricity, the telephone, television, the pocket calculator and the computer.

The University Department of Computer Science is stepping into another realm called virtual reality, where things are virtually real, where technology makes use of pictures and sounds to make the user an active participant in a three-dimensional world.

In virtual reality, you can virtually walk through an architectural floor plan and virtually hear birds singing outside, water splashing in the kitchen and classical music playing in the piano room.

You can virtually ride a mountain bike through an obstacle course, read Birma Shave signs overhead and virtually hear an "ump!" when you virtually hit a pylon.

Most important, biochemists can virtually see, move, bend and twist a drug molecule within a protein receptor, able to feel it resist incompatible structures until it locks into place.

The methods may be virtual and the experience synthetic, but the implications are real.

Using Pixel-Planes 5, the fastest known computer graphics machine, infinitely detailed images of just about anything can be created and examined physically through head, body or desktop gear. Human interaction with these images as is possible with virtual reality is unprecedented.

A user wears a head-mounted display unit — a bulky hat of two small television screens (one per eye), standard earphones and a tracking device that monitors the movement of the user's head. Other interaction is possible through a hand-held activator called an Argonne Remote Manipulator or ARM, a treadmill, joysticks or a bike, for instance.

"Swimming around in the virtual world" has been known to cause nausea, said Erik Erikson, a virtual reality research assistant from Oberlin, Ohio. Erikson designed the mountain bike application of virtual reality. Nausea, however, is a minor side effect when considering potential of the infant project, he said.

Fun applications of virtual reality such as the mountain bike demonstrate its potential, but real benefits await in the worlds of architecture and medicine.

"I like to point out what's research and what's fun," said research assistant Rich Holloway. "People tend to trivialize this whole field and talk more about the fun stuff."

Medical imaging converts CAT scan images to virtually real images, allowing doctors to see the internal three-dimensional area of a patient's body — and thus steer radiation beams aimed at conquering a malignant tumor. Such precision is not possible with a flat computer screen, said computer science professor Bill Wright.

As expected with a project in its beginning stages, development of virtual reality is hindered by some technological problems. There is a slight time lapse while the visual image adapts to user movement, Erikson said.

Also, being able to feel the force of a collision with solid objects is possible in the architectural walk-through application, for instance, but it would make the program much slower, said assistant Amitabh Varshney.

The biggest problem, Holloway said, is creating the sensation of forced feedback — making the user feel resistance to walking through walls or riding a bike uphill. Forced feedback is used in the ARM.

Images, sounds and sensations are exclusive to the user of a virtual world — a world all its own within the one we live.

## UNC can budget \$1.9 million more

By Marty Minchin  
Staff Writer

The University will have an unexpected \$1.9 million to budget this year, thanks to increased state tax revenues.

UNC is required to revert a certain amount of its state appropriations to the N.C. legislature each year. The University will have to return only \$7 million this year instead of the projected \$9 million if the state's financial picture remains the same.

Wayne Jones, associate vice chancellor for finance, said UNC administrators already were budgeting the \$1.9 million dollars.

"We won't have to hold as many positions vacant," he said. "There is some hiring going on; probably a little bit more as a result of the reversions."

Ben Tuchi, vice chancellor for business and finance, said

the \$1.9 million would be shared by the three areas in the University's budget. Academic and health affairs will divide \$1.1 million and area health education centers will receive \$800,000.

The decrease in required reversions means the University has to make fewer cuts in its original budget, Tuchi said.

"When we received this information about a week and a half ago, we were not finished with the cuts we were attempting," he said. "If we had made the cuts, this would be new money coming in."

"We're hopeful now, but the money is not in the bank yet," he said. "The state can't deliver until after the revenues come in."

Jones said the vice chancellors of each of the three areas had been notified about their portion of the \$1.9 million. The vice chancellors now will decide how to meet their budget targets.

"We believe the individual administrators have a better idea of what would be less harmful to their specific areas," Jones said.

Although the University will not have to revert as much money to the state, UNC still is working with strict budget constraints, he said.

"Our budget this year is pretty tight because of cuts made last year," Jones said. "We don't have as much as we would need. We're still working on minimal budget, but it's not quite as bad as it initially was."

Jay Robinson, UNC-system vice president for public affairs, said he was worried that the 16 system schools would not receive all the money the state appropriated to them at the beginning of the fiscal year. System schools receive state funds in four allotments throughout the year.

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The cold facts

Jennifer Kroner, a sophomore from Boulder, Colo., insulates an open-air shack with cardboard in the Pit Monday. The project by Habitat for Humanity was built to symbolize the current state of low-income housing.

## Shuttles to poll sites available for voters who live on campus

By Jackie Hershkovitz  
Staff Writer

Registered voters who live in North Campus residence halls, Hinton James, Craige and Granville Towers have the opportunity to ride shuttles to their poll sites today between 10:00 a.m. and 7:30 p.m.

The shuttles, which will depart from the Union circle, Chase and Siterson Halls, will provide free transportation to poll sites every 30 minutes.

Erik Ose, an election volunteer, said he hoped the shuttles would increase student-voter turnout.

"I would suggest that students go the extra mile to vote," Ose said. "The shuttles will make it easy for students who can't take the time to walk."

UNC senior Mark Chilton, a candidate for Chapel Hill Town Council, said he felt fairly confident students would vote.

"I can't predict numbers, but I think student-voter turnout will be better than it's ever been," Chilton said.

Carrie Kelso, a senior from Pittsburgh, Pa., said she thought shuttles would facilitate voting.

"I probably wouldn't vote if the poll sites weren't convenient," Kelso said. "But if it's right here, it's no big deal."

Kelso said the fact that a student is vying for one of the four open seats on the town council makes this a particularly interesting election.

"I'm going to vote for Mark Chilton," she said. "I think it's really neat that a student wants to get involved (in town politics)."

Bill Brent, a sophomore from Winston-Salem, said he thought student-voter turnout was low in local elections because students are ignorant of the issues and not because the poll sites are inconvenient.

"My home is in Winston-Salem,"

Low student-voter turnout expected ..... 3

Brent said. "I live at UNC, but I don't feel like the issues concern me that much."

Rob Bracknell, a senior from Franklinton, said he was not registered to vote in Chapel Hill, but he admired Mark Chilton for running for office.

"His biggest obstacle is the apathy on the part of the whole student body," Bracknell said. "I'm as guilty as the next guy."

Cheala Garland, a junior from Carboro, said she thought the shuttle service was a good way to increase student-voter turnout.

"When I didn't have a car, I didn't vote," Garland said. "I think more students will vote because of the shuttles."

Ibraz Bandukwala, a junior from Raleigh, disagreed with Garland.

"If students aren't really motivated to vote, they won't," Bandukwala said.

The two shuttle vans, which cost \$70 each to rent, are being paid for by Student Environmental Action Coalition.

Barbara Faust, chairwoman of the Orange County Board of Elections, said she expected the day to run smoothly at the polling sites.

Students who changed precincts since the last election but did not re-register should go to their old polling sites, Faust said. The students will be given transfer slips which should be taken to the police station, where the students can cast their ballots, she said.

Students who live on campus can vote at:

■ The General Administration Building, located on South Road, just before the intersection of Raleigh Road and the 15-501, for students living in all North Campus dorms except Whitehead, Alderman, Spencer, McIver and Kenan;

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## Officials still considering ticket surcharge

By Sarah Suiter  
Staff Writer

A proposal to add a \$1 surcharge on athletic and entertainment tickets to help the University's libraries is still being studied, Chancellor Paul Hardin said Monday.

The proposal, created by the Library Task Force in April, was made too late last year to be considered, he said.

A surcharge on athletic and entertainment tickets could raise an estimated \$600,000 for the libraries, according to a Library Task Force study.

Jaroslav Folda, an art professor and task force member, said members appreciated what the athletic department had done so far. But the academic side of the University is in a crisis, and task force members want to know if the surcharge is still an option, he said.

Members of a Library Advisory Board subcommittee will meet with Interim Provost William Little to discuss the surcharge and other issues, Folda said.

The N.C. General Assembly approved legislation this summer allowing a surcharge on tickets for any school

in the UNC system. Revenue generated from the ticket surcharge must be used to buy library books and materials.

But Hardin said implementing the proposal was not as easy as it seems.

UNC administrators have to decide what is fair, and the athletic department already gave \$1 million to be spent during the next five years. The \$1 million was given to a chancellor's committee. Members of the committee will decide how to spend it.

The University has to be careful not to downplay athletics and then ask the athletic department for more money.

Hardin said.

Jeff Elliott, associate athletic director, said the athletic department opposed any type of entertainment tax.

A tax on tickets would put the Smith Center at a competitive disadvantage, because people would take their business to less expensive facilities, he said.

The athletic department also would oppose any type of athletic tax, Elliott said. Athletic officials do not believe they can raise ticket prices without having to take money from the athletic

See SURCHARGE, page 4

## Giovanni challenges students to take a chance, make world a better place

By Matthew Mielke  
Staff Writer

College-aged men and women are the first generation that will have the option of staying on the earth or living in space, Nikki Giovanni told about 100 students in Memorial Hall Wednesday night.

Giovanni, a black poet, recording artist and lecturer, was the first keynote speaker during the University's Human Rights Week 1991.

"The humane thing to do is to make life on earth better," said Giovanni, who also is an English professor at Virginia

Polytechnic Institute and State University in Blacksburg.

"You have challenges that you know require the best of you," she said. "I want you to take a chance."

These challenges include fighting illiteracy and homelessness, Giovanni said. "How do we justify people sleeping on the streets?" she asked.

"Most of the people on earth are illiterate. You don't have to go very far outside of Chapel Hill to find people who can't read."

Students also should fight to change conditions for women, Giovanni said. "Woman is man's best friend, and if

they treated us as well as they treated dogs, we would be better off. There should be an organization, 'Men Against Rape.'"

It's wrong for people to feel a sense of superiority over others who belong to another gender or ethnic group because people cannot choose these things, Giovanni said.

"It is an accident of birth to be born white; it is an accident of birth to be born male; it is an accident of birth to be born American."

The only things people really can

See GIOVANNI, page 2



Nikki Giovanni

## Orange County polling sites Polls open 6:30 a.m.-7:30 p.m.

CHAPEL HILL/ORANGE COUNTY PRECINCTS	
Battle Park	Chapel Hill Community Center, Plant. Rd.
Coker Hills	Church of Reconciliation, 110 Elliott Rd.
Coles Store	Union Grove Methodist Church, Union Grove Church Rd.
Colonial Heights	YMCA, 980 Airport Rd.
*Country Club	Fetzer Gym, UNC campus
Dogwood Acres	Grey Culbreth Middle School, 225 Culbreth Rd.
*East Franklin	Lutheran Church, 300 E. Rosemary St.
Eastside	Ephesus Road Elementary School, Ephesus Church Rd.
Estes Hills	Guy B. Phillips Middle School, Estes Dr.
Foxcroft	Foxcroft Information Center, Foxcroft Apts.
Glenwood	Glenwood Elementary School, Prestwick Rd.
*Greenwood	General Administration Building, South Rd.
Kings Mill	Aldersgate Methodist Church, 632 Laurel Hill Rd.
*Lincoln	Lincoln Center Administration Building, Merritt Mill Rd.
*Mason Farm	Community Church, Purefoy Rd.
Northside	Chapel Hill Town Hall, 306 N. Columbia St.
Patterson	New Hope Community Center, Whitfield St.
Ridgefield	Binkley Baptist Church, 1712 Willow Dr.
St. John	St. John Church, 607 Pine Acres Rd.
Weaver Dairy	Fire Station, Weaver Dairy Rd. & Hwy. 86
Westwood	Frank Porter Graham Elementary School, Hwy. 54 Bypass
CARRBORO PRECINCTS	
Lions Club	Lions Club building, 131 Fidelity St.
North Carrboro	Carrboro Elementary School, Shelton St.
OWASA	OWASA Filter Plant, 400 Jones Ferry Rd.
Town Hall	Carrboro Town Hall, W. Main St.
HILLSBOROUGH PRECINCTS	
Grady Brown	Grady Brown Elementary School, 1100 New Grady Brown Sch. Rd.
Hillsborough	Parks & Recreation Center, 300 W. Tryon St.
West Hillsborough	Central Elementary School, 154 Hayes St.

\*Polling sites for students living on campus

Voting is the most basic essential of citizenship. — India Edwards