

# BULLETIN

Volume LXXVIII, Number 14

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NC STATE UNIVERSITY

News for the North Carolina State University Community

## Inside: campus safety

In the wake of last week's tragic shootings at Virginia Tech, institutions around the nation – including NC State – are re-examining their campus safety plans and crisis-response preparations. Inside this edition is an open letter from Chancellor James Oblinger, several stories on the subject of campus safety and other helpful information.

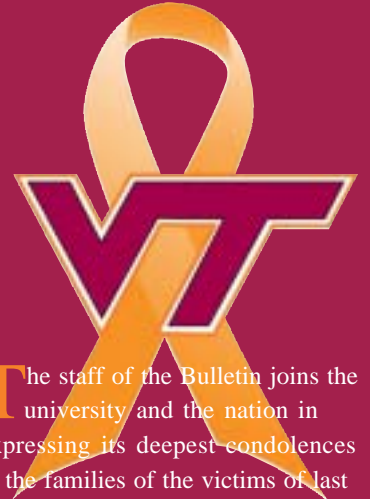
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## UNIVERSITY MOURNS FOR VIRGINIA TECH VICTIMS



Chancellor James Oblinger lights a student's candle during a vigil held April 17 on Harris Field to remember the victims of last week's shootings at Virginia Tech. (Photo by Roger Winstead)

## *In memoriam*



The staff of the Bulletin joins the university and the nation in expressing its deepest condolences to the families of the victims of last week's shootings at Virginia Tech. We remember faculty colleagues Christopher James Bishop, Jocelyne Couture-Nowak, Kevin Granata, Liviu Librescu, G.V. Loganathan, and the 27 students who were victims of this terrible tragedy.

## Former NIEHS director to give commencement address

Dr. Kenneth Olden, former director of the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program, will deliver NC State's commencement address on Saturday, May 12, at the RBC Center. The commencement ceremony will begin at 9 a.m.

The first African-American to direct one of the National Institutes of Health, Olden is currently chief of the Metastasis Section in the Laboratory of Molecular Carcinogenesis at NIEHS and Yerby Visiting Professor at the Harvard School

of Public Health.

Prior to his service at NIEHS, Olden spent 12 years at Howard University, culminating in roles as director of the Howard University Cancer Center and as professor and chair of the Department of Oncology.

Among numerous awards and hon-



OLDEN

ors, Olden has received the Toxicology Forum's Distinguished Fellow Award; the Presidential Distinguished Executive Rank Award and the Presidential Meritorious Executive Rank Award from former President Bill Clinton for sustained extraordinary accomplishments; the HHS Secretary's Distinguished Service Award; the American College of Toxicology's First Distinguished Service Award, and the National Minority Health Leadership Award. He was also the recipient of three of the most prestigious awards in public health: The Calver Award (2002), the

Sedgwick Medal (2004) and the Julius B. Richmond Award (2005).

Olden received his Ph.D. in cell biology/biochemistry from Temple University. He will receive an honorary Doctor of Sciences degree. During the ceremony, Chancellor James Oblinger will confer honorary degrees on behalf of NC State to Olden and two other distinguished recipients: Eduardo Catalano, a world-renowned architect, and Roger Milliken, chairman of Milliken & Company, a textile and chemical product company based in South Carolina. ■

## Protein found in tissue of 68-million-year-old *T. rex*

What happens when a 68 million-year-old *Tyrannosaurus Rex* meets 21<sup>st</sup> century medical science?

An NC State researcher and her colleagues at Harvard Medical School and Beth Israel Deaconess Medical Center found out when they confirmed the existence of protein in soft tissue recovered from the bone of a 68 million-year-old *T. rex*. Their results may both change the way that people think about fossil preservation and present a new method for studying diseases such as cancer.

Dr. Mary Schweitzer, assistant professor of paleontology at NC State with a joint appointment at the N.C. Museum of Natural Sciences, had previously discovered soft tissue in the leg bone of a *T. rex* recovered in 2003 from the Hell Creek formation in Montana.

After her own chemical and molecular analyses of the tissue indicated that original protein fragments might be preserved, she turned to colleagues Dr. John Asara, director of the mass spectrometry core facility at Beth Israel Deaconess Medical Center and instructor in

pathology at Harvard Medical School and co-author Dr. Lewis Cantley, to see if they could provide the "nail in the coffin" that would confirm her suspicions. That nail would be sequence – the amino acid 'letters' used to make collagen, a fibrous protein found in bone.

Schweitzer's findings – and those of her colleagues – appear in the April 13 edition of the journal *Science*.

Bone is a composite material, consisting of both protein and mineral. When minerals are removed from modern bone, a collagen matrix – fibrous, resilient material that gives the bone its structure and flexibility – is left behind. When Schweitzer demineralized the *T. rex* bone, she was surprised to find such a matrix, because current theories of fossilization held that no original organic material could survive that long. To see if the material had the characteristic cross-banded "stripes" that indicate collagen, Schweitzer and her colleagues examined the resultant soft tissue with both an electron microscope and atomic force microscopy. They then

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## CONFUCIUS INSTITUTE ANNOUNCED



Provost Larry Nielsen, second from left, shakes hands with Nanjing Normal University President Song Yongzhong during a ceremony announcing the opening of a Confucius Institute on the NC State campus. Also pictured is Ballian Li (left), NC State's vice provost for international affairs; Fang Jun (center), representing the Chinese embassy; and Howard Lee (right), chairman of the N.C. State Board of Education. (Photo by Roger Winstead)

## FOCUS ON CAMPUS SAFETY

## Open letter on campus safety from Chancellor James Oblinger

The tragedy at Virginia Tech has made campus safety the number one topic in our collective conversation. We all realize that what happened in Blacksburg could happen anywhere.

NC State takes several approaches to campus safety and emergency preparedness, starting with a well-trained police department, one of the few accredited university police departments in the country. Accreditation means our police have met or exceeded nationally recognized standards for law enforcement agencies. The university's police department provides a full range of services, including 24-hour patrol (by vehicle, on bikes, on foot and on horseback), investi-

gations, a 911 center and a crime prevention unit. The department offers a wide range of educational services.

We have universitywide crisis response and communication plans on which departmental plans are based. These allow us to understand some basic crisis response protocols. By creating a plan before a crisis erupts, we believe we



OBLINGER

have accelerated our decision-making process, an important advantage in an emergency.

We also practice emergency situations using our crisis plan. By simulating a crisis and engaging the leadership in a decision-making discussion, we improve our ability to respond to a real emergency.

Our police department also routinely practices its own crisis prevention and response planning. Drills with Wake County, such as the mock-terrorist assault at Carter-Finley Stadium two years ago, further support our preparedness.

Our Emergency Planning Committee will expedite its review of the campus

communication and emergency notification systems to make sure multiple systems are in place – and to consider suggestions made by students, such as use of Facebook and text messaging.

I assure you that just as you are thinking and talking about campus safety, the administrative leaders of the university are thinking, talking and planning.

I quickly add that all the planning in the world will not make us immune to crisis. Campus safety should not be taken for granted. Safety is a shared responsibility. I encourage you to be vigilant, to be mindful of good safety practices and to let campus police know of any suspicious activity. ■

## University considering variety of new ways to get word out in a crisis

On a campus as large as NC State's, with a population that is spread out over hundreds of buildings and thousands of acres, communication is difficult in the best of times. In an emergency, communications could be a real challenge, which is why several new communications tools are being considered.

"NC State is a large campus, with more than 30,000 students and about 7,000 employees, including approximately 1,800 full- and part-time faculty and extension field faculty," said David Rainer, associate vice chancellor for environmental health and public safety. "Including visitors, there could be 40,000 people or more on campus at any given time. We are the equivalent of a medium-sized North Carolina city. Imagine trying to get a message out instantly to the entire population of Wilson or Burlington."

But communication in a crisis is

**"We are the equivalent of a medium-sized North Carolina city. Imagine trying to get a message out instantly to the entire population of Wilson or Burlington."**

— DAVID RAINER,  
ASSOCIATE VICE CHANCELLOR FOR  
ENVIRONMENTAL HEALTH AND PUBLIC SAFETY

vital. It's a two-way street where good communication from the scene to decision makers is as important as getting the word out to campus.

"We know from having practiced many different drill scenarios that the first wave of communication in a crisis is not entirely accurate," Rainer said. "And we know how inaccurate communication creates problems. We also know that we need to get accurate communication out to the campus in an emergency. The answer is in finding the right combination of tools that provide a range of communication options and redundancy."

Rainer said the NC State home page is the university's best communications

tool, but might be overwhelmed by the increased traffic in an emergency. Using media to get the word out is a viable option, but not entirely reliable since it is dependent on organizations that have other obligations. New and emerging methods, such as Facebook, text messaging, reverse 9-1-1, and even more traditional methods such as a siren system are currently under consideration.

NC State has invested in PIER, a system that provides some traditional and non-traditional options. The university could begin to use PIER as a back-up Web site as well as to interface with emerging technologies by the fall.

"PIER essentially provides us a back-up home page should ours become locked up by increased traffic – and that's not unusual in an emergency," Rainer said. "Virginia Tech's home page was virtually inaccessible within a half hour of the recent shootings. But PIER potentially provides us with direct opportunities to send messages through Facebook and text messaging."

No system is perfect, Rainer said. Reverse 9-1-1 has the capability of delivering a phone or text message campuswide or to a subset of the campus and can be pre-programmed easily with land-line phones. But few students have

land lines in their rooms, so they would need to provide their cell numbers for the system to be fully effective. Rainer added that a siren system currently under consideration could add another tool for communication, although sirens could only provide a warning, not specific instruction.

"If we have multiple tools – the home page and back-up system such as PIER, reverse 9-1-1, text messaging and a siren system – then we can feel much more confident in our ability to get the word out," Rainer said. "In the near term, we will be setting up a process for gathering cell phone numbers."

He added that emergency responders, including those at NC State, have been able to make good progress to assure interoperability of communications systems between emergency responders.

"NC State has partnered with Wake County to purchase a new communications system for all emergency responders on campus. This system allows campus police, fire protection and others to monitor and talk directly to supporting emergency response agencies. That's important given that a major emergency likely would involve multiple agencies, including responders from Wake County and Raleigh." ■

## Education, training important in crime prevention

A large part of keeping any campus safe lies in developing strong relationships between campus police, students, faculty and staff, says Sgt. Jon Barnwell of the NC State Campus Police. To accomplish that goal, the department offers specialized safety training and educational programming to its campus constituents, with topics ranging from personal safety and theft prevention to vehicle safety, tailgating policy and alcohol regulations. Last year, Campus Police made more than 250 safety-related presentations to faculty, staff and student groups.

"It's part of our mission to provide this training to the public," Barnwell

says. "We develop programs and training that speak to the needs that the campus community has – whether it's faculty, staff or students – and work with them to answer their questions."

In a campus community the size of NC State, it's particularly important to get students involved in crime prevention. Since 2002, Campus Police has assigned an officer to every residence hall, to act as both a liaison between students and the department and as a source of information to residents. The officer provides at least one program per semester to residents, but often there are requests for more. And the relationship appears to be working: Students are now more likely to report inci-

dents and suspicious activity to the department than they were prior to the officer liaison program.

Campus Police also holds periodic town hall meetings with different campus communities in order to hear the safety concerns of faculty and staff.

"It's a good way to get feedback from the community about the job we're doing, and a way to build closer community ties," Barnwell says. "Ultimately, we want faculty, staff and students to start thinking about safety before it becomes an issue – to report suspicious activity before crimes occur. It's much easier to prevent being put into a situation than it is to get out of it." ■

### BULLETIN

North Carolina State University  
Raleigh, North Carolina  
Dr. James Oblinger, Chancellor



The *Bulletin*, NC State University's faculty and staff newspaper, is produced by NC State News Services. It is published every third Friday during the academic year and once per month during the summer.

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#### Distribution to faculty and staff

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#### Deadlines

Information may be sent by mail to *Bulletin*, Box 7504, by fax to 515-2556 or by e-mail to [bulletin@ncsu.edu](mailto:bulletin@ncsu.edu). Deadline is noon Tuesday 10 days before publication. The deadline for the May 18 edition is May 8. For information, call 515-3470 or visit: [www.ncsu.edu/BulletinOnline/](http://www.ncsu.edu/BulletinOnline/)

FOCUS ON CAMPUS SAFETY

# NC State active participant in crisis training

Responding to a campus emergency typically takes coordination and communication and draws on any number of campus resources. By practicing emergency response and communication, campus decision makers get a better idea of how to react when faced with an emergency.

The university has developed a crisis communications plan and routinely practices crisis communication based on the plan's protocols.

The university has conducted or participated in drills that include:

- Infectious disease outbreak (smallpox, pandemic flu with the Wake County Health Department)
- Radioactive material release ("dirty bomb") with Raleigh Hazmat, Raleigh Police Bomb Squad
- Terrorist chemical attack with Raleigh Hazmat, Wake and State Emergency Management, federal agencies, police agencies
- Terrorist attack with hostages at an athletics facility with local, state and federal police agencies
- Active shooter on campus with multiple police agencies
- Urban search and rescue, with Raleigh Hazmat and Fire Department
- Train derailment with state, local and federal agencies

"We take our job of protecting people and assets very seriously," said Charles Leffler, vice chancellor for finance and business. (Campus Police and the Office of Environmental Health and Safety are included within the Office of Finance and Business.)

"NC State has a police force, environmental health staff and fire protection staff that are trained as first responders to different types of disasters or emergencies. In addition, we have trained other members of our campus community to play key roles in preparing for a disaster and responding to specific situations."

Leffler said the drills are designed to test the university's ability to respond promptly and communicate effectively to drill participants and the community at large, and to "take appropriate action to stabilize, mitigate and resolve the problem."

Chancellors, vice chancellors and other key administrative personnel typically participate in the drills. Leffler said the emergency response drills involve scenarios with realistic details that evolve either in real time, or are scaled so that each 15-minute increment represents an hour, for example.

"We are as realistic as we can be in terms of the kinds of situations that are posed for our drills and the details that evolve throughout the day," he said.

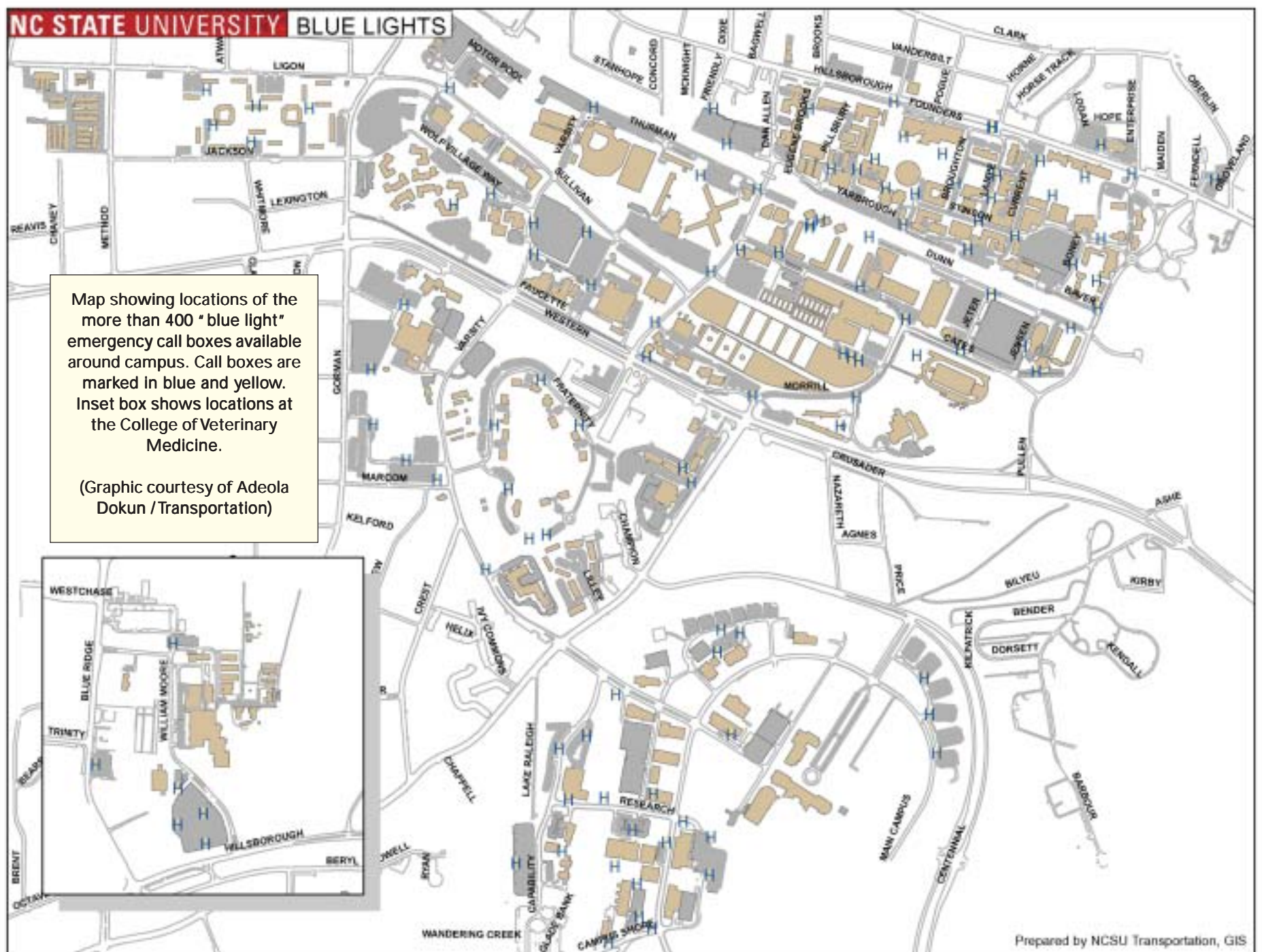
Leffler said the university has learned from each of the drills.

"No crisis proceeds according to plan," he said. "By drilling and practicing, we give ourselves the opportunity to make decisions faster and to anticipate problems. Those are important advantages in an emergency." ■

## VIRGINIA TECH VIGIL



Hundreds of faculty, staff and students gathered on Harris Field April 17 to mourn the victims of the Virginia Tech tragedy. (Photos by Roger Winstead)



## April-May

## 27 Friday

## Baseball Game

Wolfpack vs. University of North Carolina-Chapel Hill, 7 p.m., Doak Field

## 28 Saturday

## Baseball Game

Wolfpack vs. University of North Carolina-Chapel Hill, 7 p.m., Doak Field

## 29 Sunday

## Baseball Game

Wolfpack vs. University of North Carolina-Chapel Hill, 1:30 p.m., Doak Field

## Music@NC State Concert

Raleigh Civic Chamber Orchestra, 4 p.m., Stewart Theatre. Tickets are \$10, <http://ticketcentral.ncsu.edu> or 515-1100

## 30 Monday

## Genetics Seminar

"Transgenic Manipulation of Pests and Disease Vectors: A New Program for CALS?," Dr. Fred Gould, NC State, 1:30 p.m., 2405 Williams Hall

## Horticultural Science Seminar

"Sweetpotato Breeding: From Tables to Gas Tanks to Gardens," Dr. Craig Yencho, NC State, 3 p.m., 121 Kilgore Hall

## 1 Tuesday

## NCSU Libraries Lecture

I.T. Littleton Seminar, "Digital Media Literacy and Learning in Virtual Worlds," Dr. Constance Steinkuehler, University of Wisconsin, 2 p.m., Assembly Room, East Wing, D.H. Hill Library

## 3 Thursday

## Biochemistry Seminar

Dr. Roland Stein, Vanderbilt University, 4 p.m., 128-A Polk Hall

## 4 Friday

## Baseball Game

Wolfpack vs. Campbell University, 7 p.m., Doak Field

## 5 Saturday

## Baseball Game

Wolfpack vs. Campbell University, 2 p.m., Doak Field

## 10 Thursday

## Molecular Biomedical Sciences Seminar

"Neurosteroid-Based Antiepileptic Drugs," Dr. Doodipala Reddy, NC State, 12:15 p.m., R101 CVM Research Building

## 12 Saturday

## Spring Graduation Exercises

## Calendar Submissions

Events sponsored by NC State groups and held on campus are published in the calendar. Submissions should state the time, date, place, sponsor and title of event, the name of the speaker and his or her affiliation, the admission cost and the name and telephone number of the contact person.

Send items to [bulletin@ncsu.edu](mailto:bulletin@ncsu.edu). You may also mail items to **Bulletin, NC State News Services, Box 7504**, or fax to **515-2556**. The deadline is noon, Tuesday, 10 days before the publication date. For the May 18 calendar, the deadline is May 8.

Commencement begins at 9 a.m., RBC Center

## 15 Tuesday

## Baseball Game

Wolfpack vs. University of North Carolina-Asheville, 6 p.m., Doak Field

## 17 Thursday

## Baseball Game

Wolfpack vs. Clemson University, 7 p.m., Doak Field

## 18 Friday

## Baseball Game

Wolfpack vs. Clemson University, 7 p.m., Doak Field

## Ongoing

## Campus Cinema

Movies are \$2.50 for the general public and \$1.50 for faculty, staff and students unless otherwise noted:

- "Smokin' Aces," April 27, 10 p.m.; April 28, 7 p.m.
- "Stomp the Yard," April 27, 7:30 p.m.; April 28, 9:30 p.m.
- "Night at the Museum," May 3, 7 and 9 p.m., free

## Art &amp; Design Exhibits

"The Natural World" and "Exquisite Entomology: The Beauty of Bugs," through May 13, Gregg Museum of Art & Design

Read it online at [news.ncsu.edu](http://news.ncsu.edu)

✓ **ECONOMIC DEVELOPMENT FORUM SLATED FOR MAY 15**

✓ **ROCKY BRANCH CREEK RESTORATION AT STANDSTILL**

✓ **HURRICANE RESEARCH PREDICTS ACTIVE SEASON**

<http://news.ncsu.edu>

## Dino

CONTINUED FROM PAGE 1

tested it against various antibodies that are known to react with collagen.

"We looked for collagen because it's plentiful, it's durable, and it has been recovered from other fossil materials, although none as old as this *T. rex*," Schweitzer says. "It's also a relatively easy molecule to identify, and it's not something that any microbes living in the immediate environment could produce. So identifying collagen in the soft tissue would indicate that it is original to the *T. rex* – that the tissue contains remnants of the molecules produced by the dinosaur, though highly altered."

But the evidence that Schweitzer had managed to find for the existence of collagen, while strongly suggestive, was not definitive. Fortunately, a mass spectrometry technique developed for studying low-level proteins in human diseases in Asara's mass spectrometry core facility

## Bowles seeks improvements to state personnel system

Erskine Bowles, president of the University of North Carolina system, has asked the state legislature to examine possible adjustments to the state personnel system that would allow greater flexibility for campus employees across the state.

As part of his President's Advisory Committee on Efficiency & Effectiveness (PACE), Bowles asked staff members at each UNC system school for recommendations regarding desired improvements to the state employee system or ideas related to forming a new human resources system for university employees.

Based on feedback received from staff groups across the UNC system, Bowles opted not to pursue the idea of forming a new system, but said he would propose the formation of a committee to explore what improvements could be made under the current state system to enhance benefits to university employees.

"I have heard the feedback from our staff, and I have decided that we will not move forward with legislation to create a separate HR system," Bowles wrote in a letter dated March 16 addressed to the UNC system's Staff Assembly, a delegation made up of representatives from the 16 system universities, the N.C. School of the Arts, the UNC General Administration and the UNC-TV system. "Instead, I will ask for legislation to create a task force to identify possible modifications to the State Personnel Act that will provide the university (system) with greater flexibility in personnel matters so that we can better meet the needs of our employees and improve the efficiency of our personnel operations."

Bowles said the task force would include chancellors and representatives from human resources, finance profes-

sionals, and university staff. Bowles will seek input from the staff assembly for employee nominations to serve on the commission.

A bill to create the study group has been introduced in the N.C. House of Representatives. Once formed, the group will submit recommended changes for the Office of State Personnel to the state legislature by January 2008.

In February, J.C. Boykin, chair of NC State's Staff Senate and chair of the UNC system Staff Assembly, led a meeting of the chairs of the elected staff groups from each UNC system school to discuss ideas for improving the state personnel system for university employees. Boykin summarized the recommendations in a report he sent to Bowles in early March.

At the April meeting of NC State's Staff Senate, Boykin said representatives from 12 universities supported the idea of the UNC system creating a separate HR system for university staff, while four were opposed to the notion. All representatives were in agreement, however, that adjustments should be made to the current system to allow for flexibility in areas such as salaries, merit and performance pay raises, benefits and job grievance procedures.

"There are 45,000 employees in the university system classified in non-faculty, non-administrative positions who are considered staff," Boykin said. "Because of the provisions in the current State Personnel Act, President Bowles and the chancellors of the universities have virtually no input on salaries, job classification, benefits or grievance procedures.

"It's hard when more than half the people that work for you don't have any input on these items. President Bowles was of the opinion that he could improve some (things) in those areas." ■

was able to do what hadn't been possible before: provide the sequence of a 68 million-year-old protein and thus identify it.

Mass spectrometry measures the mass to charge ratio of individual molecules (peptides) that have been charged, identifying them by weight. Peptide fragmentation patterns reveal the amino acid sequence. The advantage of this method is that it is extremely sensitive and can be used in cases where only very small amounts of material are available for analysis. That was definitely true of the *T. rex* sample, which only produced a minuscule amount of remnant protein, and the protein was in a mixture of other material that had remained after the extraction process.

Asara first applied the method to modern ostrich and then to 160,000-600,000 year-old mastodon to demonstrate the efficiency and accuracy of their method while sequencing novel sequences unique to mastodon. Then he successfully sequenced the dinosaur

protein, identifying the amino acids and confirming that the material from the *T. rex* was collagen. When the researchers compared the collagen sequences to a database that contains existing sequences from modern species, they found that the *T. rex* sequence had similarities to those of chicken, frog and newt.

"The similarity to chicken is definitely what we would expect given the relationship between modern birds and dinosaurs," Schweitzer says. "From a paleo standpoint, sequence data really is the nail in the coffin that confirms the preservation of these tissues. This data will help us learn more about dinosaurs' evolutionary relationships, about how preservation happens, and about how molecules degrade over time, which could also have some important medical implications for treating disease."

Schweitzer's research was funded by grants from the National Science Foundation and the David and Lucille Packard Foundation. ■