

BULLETIN

Volume LXXVIII, Number 17

Friday, June 29, 2007

www.ncsu.edu/BulletinOnline/

NC STATE UNIVERSITY

News for the North Carolina State University Community



Facelift of home page nearly complete

Web users can view, test university's new look during 'soft' launch of redesign in mid-July

NC State's strongest "voice" to the world, the university's Web site, www.ncsu.edu, is about to undergo a major change.

Beginning the week of July 16, visitors to the university home page will find a link to the redesigned site, where they can experience the new content, video and multimedia features and provide feedback prior to the site's official launch in August.

"Because the site has so much new content and is so different from the current site, we wanted to give people, particularly those on campus, an opportunity to get used to the new site before it goes live," said Jason Simon, the university's director of creative services.

Chancellor James Oblinger ap-

pointed a 30-person Web site advisory committee that included faculty, staff and students in March 2006. The committee has provided leadership and input on the project while the university's Public Affairs unit has worked directly with Ripple Effects Interactive, one of the nation's top interactive agencies, to fully develop and implement the site.

The monthlong "soft" launch phase also gives site developers an opportunity to address any problems or technical issues prior to officially replacing the current site later this summer.

Debbie Griffith, associate vice chancellor for public affairs, stressed that the

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'Pack' paleontologist pinpoints prehistoric Peruvian penguins

Giant prehistoric penguins? In Peru? It sounds more like something out of Hollywood than science, but a researcher from NC State, along with U.S., Peruvian and Argentine collaborators, has shown that two heretofore undiscovered penguin species reached equatorial regions tens of millions of years earlier than expected and during a period when the earth was much warmer than it is now.

Paleontologist Dr. Julia Clarke, assistant professor of marine, earth and atmospheric sciences at NC State with appointments at the North Carolina Museum of Natural Sciences and the American Museum of Natural History, and colleagues studied two newly discovered extinct species of penguins. Peruvian paleontologists discovered the new penguins' sites in 2005.

The research was published online June 25 in *Proceedings of the National Academy of Sciences*. It was funded by the National Science Foundation Office of International Science and Engineering and the National Geographic Society.

The first of the new species, *Icadyptes*

salasi, stood 5 feet tall and lived about 36 million years ago. The second new species, *Perudyptes devriesi*, lived about 42 million years ago, was approximately the same size as a living King Penguin (2 ½ to 3 feet tall) and represents a very early part of penguin evolutionary history. Both of these species lived on the southern coast of Peru. These new penguin fossils are among the most complete yet recovered and call into question hypotheses about the timing and pattern of penguin evolution and expansion. Previous theories held that penguins probably evolved in high latitudes (Antarctica and New Zealand) and then moved into lower latitudes that are closer to the equator about 10 million years ago – long after significant global cooling that occurred about 34 million years ago.

"We tend to think of penguins as being cold-adapted species," Clarke says, "even the small penguins in equatorial regions today, but the new fossils date back to one of the warmest

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NC State paleontologist Dr. Julia Clarke and colleagues have discovered two new prehistoric penguin species that reached equatorial regions and existed tens of millions of years earlier than expected. The new species are shown to scale with the only extant penguin inhabiting Peru (center). (Art by Kristin Lamm)

NC State's veterinary hospital offers assistance in dealing with problem pets

Behavioral problems in your pets can be extremely frustrating, but you don't have to be either Dr. Doolittle or a psychic to deal with them. In fact, the new Animal Behavior Service offered by

the Veterinary Teaching Hospital (VTH) of the College of Veterinary Medicine may be just what the doctor ordered.

One of 13 VTH companion animal specialties, the new service will work with

referring veterinarians and their clients to provide personalized treatment of companion animal behavior problems. In dogs, these behavioral concerns include separation anxiety, thunderstorm phobia,

canine compulsive disorder, canine cognitive dysfunction and aggression. In cats, common behavior problems include

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Fats and oils – good for French fries and long drives

Earlier this year, NC State and partner company Diversified Energy Corporation announced a licensing agreement on a process that converts vegetable oil and virtually any other fat source into jet fuel.

Now they've gone one step further, announcing a provisional patent for use of the same process to convert fats and oils into biogasoline that can be used to fuel cars, trucks or anything else with a conventional gasoline engine.

Existing transportation fuel infrastructures and gasoline engines would be able to

use the biogasoline without modification since the

biofuel has equivalent chemical, physical and combustion characteristics to traditional petroleum-derived gasoline.

NC State's Dr. Bill Roberts, professor of mechanical and aerospace engineering; Dr. Henry Lamb, professor of chemical and biomolecular engineering; Dr. Larry Stikeleather, professor of biological and agricultural engineering; and Tim Turner, a graduate student in the department of mechanical and aerospace engineering, have worked in close partnership to develop the platform technology.

The process, trademarked as Centia™, is a cost-effective, "green" method of producing biofuels, the researchers say.

New freeway interchange design saves land

NC State transportation engineers have designed a "nano-interchange" that requires less real estate, making it a good

Research Roundup

alternative for high-density urban areas where land is scarce and expensive.

Dr. Joseph E. Hummer, professor of civil, construction, and environmental engineering, and recent master's graduate Meredith L. Harris have designed a unique four-level, freeway-to-freeway interchange that saves about 10 to 30 acres of land when compared to the conventional four-level interchange. The nano-interchange relies on all-directional connections, combinations of left- and right-hand entrances, and exits and four levels of freeway and ramp structures to minimize right-of-way acreage. Hummer calls it the "world's smallest free-flowing interchange."

The conventional four-level interchange accommodates all ramp speeds and consists of one freeway crossing over another, with two additional levels of connector roads that also cross. It is a common urban interchange design found throughout the United States.

The nano-interchange designs divide each freeway into two levels. The north-south freeway, for example, is split so that the southbound level is the lowest of all four levels and the northbound is the highest. Crossing, but sandwiched between these two levels, are two more levels that make up the east-west freeway. With the main lines arranged in this manner, the ramps can be direct turns.

Although the nano-interchange costs more to build than the four-level inter-

change, in dense urban areas where open land is scarce and very expensive, the nano-interchange may be the best and least expensive option. Hummer believes that the nano-interchange would be an especially good choice for large, dense cities in developing countries.

Study to investigate urban park use

Do children go to the park anymore?

With childhood obesity increasing in the United States, creating fun and inexpensive ways for children to be more active is vital. An NC State research group is looking at one way to address this problem by studying the relationship between communities and local park usage.

Robin Moore, professor of landscape architecture in the College of Design, and Dr. Jason Bocarro, assistant professor of parks, recreation and tourism management in the College of Natural Resources, are part of a larger team from both colleges involved in studying urban parks and how they are being used – or not used – by local residents, particularly in disadvantaged communities which are traditionally at higher risk for obesity.

The NC State team has received a two-year, \$200,000 grant from the Robert Wood Johnson Foundation to study park use in Durham, which was selected because it's an urban environment with a

very high concentration of parks in the central area of the city. The researchers hope that their analysis will aid park professionals and city planners in helping local residents get the most out of existing parks, as well as aid them in planning future parks.

"The aim is to figure out both what families find attractive about parks and what prevents them from using the parks – location and traffic issues, safety concerns, etc. – and to use that information in ways that will increase the park's effectiveness," Bocarro says.

The researchers will study park design, the physical characteristics of the surrounding neighborhood, such as population type and density and traffic patterns, and uses of the parks.

Fibers mimic muscle

Plastic tubes + electric current = muscle.

Two NC State researchers have found that certain strands of fibers that resemble human muscle can exhibit muscle-like capabilities when electrical currents are applied, paving the way for advancements and potential applications in several fields, including robotics, "smart textiles," prosthetics and biomedicine.

Drs. Tushar Ghosh, professor of textile and apparel technology and management, and John Muth, associate professor of electrical and computer engineering, have shown for the first time that plastic tube structures in the shape of human muscle strands can be manipulated with electricity.

Ghosh and Muth used polyurethane and silicone tubes in their experiments. When an electric current is applied, the tubes exhibit movements and produce forces similar to that of human muscle. The tubes are the first artificial muscle-like fibers produced in a lab. The prototypes used in the experiment were roughly the size of a pencil lead, significantly larger than an actual human muscle fiber.

The results are important, Ghosh and Muth say, because the experiment shows that certain polymers can perform like muscle tissue. The goal now is to work on scaling the fibers down to the size of muscle fibers. ■



The nano-interchange relies on all-directional connections, combinations of left- and right-hand entrances and exits and four levels of freeway and ramp structures to minimize right-of-way. (Image courtesy of Meredith L. Harris).

NC State to award \$625,000 for clean fuel projects

NC State is accepting applications for \$625,000 in federal transportation funds to support emission-reduction projects, such as purchasing alternative fuel vehicles, installing infrastructure for cleaner burning alternative fuels and retrofitting older diesel vehicles.

The funding is available through the university's Clean Fuel Advanced Technology (CFAT) project, a three-year, \$2 million initiative developed by the North Carolina Solar Center, and funded by federal dollars from the Department of Transportation with support from the State Energy Office and Division of Air Quality.

Funding of up to \$150,000 per project is available for government, business and nonprofit projects. In order to be eligible, projects must reduce transportation-related emissions within eligible counties. Applications must be received by July 16. Guidelines and applications are available at www.ncmobileCARE.org.

This is the second round of funding available through CFAT. In February, more than \$250,000 was awarded for emission reduction projects ranging from electric vehicles to biodiesel pumps. The city of Winston-Salem and Wake County

are replacing gasoline vehicles with electric vehicles that are recharged through household-style electrical outlets and have zero tailpipe emissions. Duke Energy purchased two hybrid electric/diesel aerial trucks to reduce emissions from idling on job sites. Three projects expanded the use of biodiesel in the Triangle, Charlotte and the Great Smokies National Park. The city of Greensboro installed diesel oxidation catalysts on 20 trucks to reduce particulate matter, tiny particles that lodge deep in the lungs and may cause respiratory problems. ■

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

Office managers should notify the *Bulletin* staff in writing to change the number of copies received at their campus box numbers.

Deadlines

Information may be sent by mail to *Bulletin*, Box 7504, by fax to 515-2556 or by e-mail to bulletin@ncsu.edu. Deadline is noon Tuesday 10 days before publication. The deadline for the July 20 edition is July 10. For information, call 515-3470 or visit: www.ncsu.edu/BulletinOnline/

Web

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launch of the site is not the end of the process, but a continuation of a plan to update and further develop Web communications.

"Our Web site is going to continually evolve," Griffith said. "We will add new features, new multimedia elements, new mini-sites, and all sorts of other tools related to new and emerging technology."

To enable this continued development and maintenance of the site, the Web committee recommended hiring dedicated staff. With the full support of Chancellor Oblinger, a four-person staff has been approved and funded within the public affairs unit.

Griffith added that the redesigned site is the core piece of the new focus on Web communica-

tions that will include electronic communications for employees and external audiences and a redesign for *news.ncsu.edu*, the university news site launched about one year ago.

The new Web site includes a top tier of nearly 100 new pages as well as multiple feature and video stories and image-based slideshows.

"It's been a huge and complicated task, but having the support of university administration and the Web advisory committee as well as the considerable amount of support the project has garnered throughout campus has helped us work through the many design and functionality issues that have to be considered," Simon said.

A Web site that detailed the ongoing work of the committee, including a blog that solicited input from the campus community (<http://ncsu.edu/redesign>), has been a key part of the redesign process. ■

BULLETIN BOARD

Wolfline bus stop temporarily moved

The Wolfline bus stop for Route 3 Engineering serving Harrelson Hall has been temporarily moved across the street in front of Broughton Hall in order to avoid construction impacts. The relocation will remain in effect through Friday, Aug. 10. Vehicles traveling along Stinson Drive in the Polk/Broughton Hall area are advised to use extra caution and be mindful of pedestrians boarding/deboarding Wolfline buses.

Campus given access to video history archive

The Renaissance Computing Institute (RENCI) is now providing NC State faculty, staff and students with access to the University of Southern California Shoah Foundation Institute's Visual History Archive (VHA). This archive, the world's largest, includes nearly 52,000 video testimonies of Holocaust survivors and other witnesses collected in 32 languages and from 56 countries. The archive grew from a foundation established by Hollywood director Steven Spielberg to document the experiences of survivors and witnesses of the Holocaust.

Anyone connected to the NC State network can access the archive at <http://vha.renci.org>. Users can conduct a variety of searches using a hierarchical thesaurus that includes more than 50,000 geographic and experiential keywords, as well as the names of every person mentioned in the testimonies and biographical information for each interviewee. Users can request testimonies already available on the 5.5-terabyte digital media cache hosted by RENCi, or request that testimonies be uploaded from the Los Angeles-based archive. If requesting a testimony from the main archive, users are informed via e-mail when the testimony arrives. All requests are filled within 48 hours.

NC State to participate in Ph.D. Completion Project

The Council of Graduate Schools (CGS) has selected NC State as one of 22 universities to participate in a national initiative to increase completion rates in doctoral programs.

As part of this second phase of the Ph.D. Completion Project, three-year grants of as much as \$80,000 will provide first-time funding to eight universities and continuing support to 14 institutions that have participated in the project previously. A broader community of universities, known as Project Partners, has been invited to submit data on doctoral degree completion and attrition and participate in the project.

This major initiative in graduate education is designed to address issues of doctoral attrition and completion in the sciences, engineering and mathematics, and the humanities and social sciences. Institutions are creating interventions and evaluating the effect of these interventions on their attrition patterns and completion rates.

IDEA Grant proposals being accepted

DELTA is currently accepting proposals for its Innovation in Distributed Education Application (IDEA) Grants, which provide funding and personnel support for the planning, design, and development of distance education (DE) courses and programs.

Proposals may be submitted electronically through the program's Web site, <http://delta.ncsu.edu/ideagrants/>. Proposals must be submitted no later than 5 p.m. on Thursday, July 12. Proposals will be reviewed to identify those projects that offer the best match between academic unit goals, faculty expertise, market opportunities, and DELTA resources.

Consultations with DELTA staff are available at any time before the application deadline. IDEA Grant consultations provide the opportunity to ask specific questions or to discuss proposal ideas with appropriate DELTA staff. All consultations must be scheduled at least 48 hours in advance. To schedule an appointment or obtain additional information, e-mail ideagrants@lists.ncsu.edu.



The first complete skull of a giant penguin is shown at top. The skull is from the new species *Icadypetes salasi* (1.5m estimated standing height) from the late Eocene of Peru. A skull of *Spheniscus humboldti*, the only species inhabiting Peru today, is shown for scale at bottom. (Photo courtesy of Daniel Ksepka)

Penguins

CONTINUED FROM PAGE 1

periods in the last 65 million years of Earth's history. The evidence indicates that penguins reached low latitude regions more than 30 million years prior to our previous estimates."

The new species are the first fossils to indicate a significant and diverse presence of penguins in equatorial areas during a period that predates one of the most important climatic shifts in Earth's history, the transition from extremely warm temperatures in the Paleocene and Eocene Epochs to the development of "icehouse" Earth conditions and permanent polar icecaps. Not only did penguins reach low latitudes during this warmer interval, but they thrived: more species are known from the new Peruvian localities than inhabit those regions today.

By comparing the pattern of evolutionary relationships with the geographic distribution of other fossil penguins, Clarke and colleagues

estimate that the two Peruvian species are the product of two separate dispersal events. The ancestors of *Perudyptes* appear to have inhabited Antarctica, while those of *Icadypetes* may have originated near New Zealand.

The new penguin specimens are among the most complete yet discovered that show us what early penguins looked like.

Although these fossils seem to contradict some of what we think we know about the relationship between penguins and climate, Clarke cautions against assuming that just because prehistoric penguins may not have been cold-adapted, living penguins won't be negatively affected by climate change.

"These Peruvian species are early branches off the penguin family tree, that are comparatively distant cousins of living penguins," Clarke says. "In addition, current global warming is occurring on a significantly shorter timescale. The data from these new fossil species cannot be used to argue that warming wouldn't negatively impact living penguins." ■

Pets

CONTINUED FROM PAGE 1

house-soiling, compulsive disorders and fear-motivated aggression.

After a consultation with a client and observation of the animal, the service will develop a treatment program in writing for the client and provide the referring veterinarian with a letter summarizing the diagnosis and the recommended management plan.

The new behavior service, formerly the Veterinary Behavior Clinic operated by Dr. Barbara Sherman, is incorporated into the VTH

as a satellite operation. Sherman will continue to direct the service, which is currently located at the Veterinary Referral Center in Cary.

President-elect of the American College of Veterinary Behaviorists, Sherman is certified as an applied animal behaviorist by the Animal Behavior Society. In addition to her role as director of the service, she will teach animal behavior to veterinary students and direct a behavior residency training program.

Veterinarians may refer clients to www.animalbehaviorservice.com for more information. Clients may contact the service directly by phone at 460-8512 or by e-mail at animalbehavior@ncsu.edu. ■

Obituaries

Timothy Robert Hurley, a former employee of the poultry science department, died May 5. He was 78.

A native of Remsen, N.Y., Hurley was a veteran of the U.S. Air Force.

Hurley is survived by three daughters, Ellen, Susan, and Maureen; two sons, Paul and Tim; a brother, Donald; a half-brother, Mike; and eight grandchildren.

Memorial contributions may be made to Saint Joseph Catholic Church Building Fund, 2817 Poole Road, Raleigh, NC 27610.

Ethel Clifton Raymond, a university staff member from 1960 to 1980, died May 27. She was 87.

A native of Raleigh, Raymond graduated from Peace College in 1938.

She is survived by her son, Art; two brothers, Robert and Edwin; two sisters, Dorothy and Mary; and three grandchildren.

Memorials may be made to the Forest Hills Baptist Church Building Fund, 201 Dixie Trail, Raleigh, NC 27607.

Arts NC State announces 2007-08 performance schedules

They say that “the show must go on,” and so it will in 2007-08 for University Theatre. Even though the Frank Thompson Building will be closed for major renovations, the productions will continue.

Performances of “A Few Good Men” and “Godspell” will be held in Stewart Theatre, while a presentation of “Dearly Departed” will take place in the Talley Student Center Ballroom. Collaborative efforts with Meredith College on “Rosencrantz & Guildenstern are Dead” and “The Real Inspector Hound” will be held off campus.

Tickets for University Theatre, the Dance Program and Music@NCState events for 2007-08 will go on sale at noon on Monday, July 9. Subscription sales for

Center Stage will also be accepted at that time.

Among the events slated for Center Stage’s 36th season is a concert by the Regina Carter Quintet, whose lead artist is considered by many to be the top jazz violinist of our time. Three dance companies will perform this season, including Garth Fagan Dance, led by the renowned choreographer best known for his Tony Award-winning work on “The Lion King.”

The popular Kidstuff Series will include productions of “The Velveteen Rabbit” on Oct. 14 and “Junie B. Jones” on March 16. Single event tickets for the Kidstuff Series go on sale Sept. 24.

For schedule and ticket information, visit <http://ticketcentral.ncsu.edu> or call 515-1100. ■



Angelique Kidjo, whose blend of traditional West African sound with elements of American R&B, funk and jazz has earned her four Grammy nominations, is one of several world-class musicians who will perform this upcoming season in Arts NC State’s Center Stage series. (Contributed photo)

CALENDAR

July

2 Monday

Summer Session II Begins

First day of classes for Second Summer Session

3 Tuesday

“Harry Potter and the Goblet of Fire”

8 p.m., Campus Cinema, free

4 Wednesday

University Holiday

Most offices closed in observance of Independence Day

5 Thursday

“Harry Potter and the Goblet of Fire”

8 p.m., Campus Cinema, free

10 Tuesday

“Teenage Mutant Ninja Turtles II: The Secret of the Ooze”

8 p.m., Campus Cinema, free

12 Thursday

“Teenage Mutant Ninja Turtles II: The Secret of the Ooze”

8 p.m., Campus Cinema, free

17 Tuesday

“The Incredibles”

8 p.m., Campus Cinema, free

19 Thursday

“The Incredibles”

8 p.m., Campus Cinema, free

Calendar Submissions

NC State-sponsored events 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. You may also mail items to **Calendar Editor, NC State News Services, Box 7504**, or fax to **515-2556**. The deadline is noon, Tuesday, 10 days before the publication date. For the July 20 calendar, the deadline is July 10.

Center Stage

Music

Old School Freight Train

Friday, Sept. 14
Acoustic blend of jazz, Latin, Celtic, bluegrass and pop

Regina Carter Quintet

Saturday, Nov. 3
Jazz violin

DBR & The Mission

Saturday, Feb. 9
Multiple-genre contemporary ensemble led by composer and violinist Daniel Bernard

Angelique Kidjo

Tuesday, April 8
Singer blending traditional West African sound with elements of American R&B, funk and jazz

Alison Brown Quartet with special guest Joe Craven

Saturday, April 19
Banjo and jazz-hued acoustic music

<http://ticketcentral.ncsu.edu>

Theatre

“Catch-22”

Tuesday, Oct. 9
Joseph Heller’s satire, performed by the Aquila Theatre Company

“Moby Dick Rehearsed”

Tuesday, March 25
Orson Welles’ adaptation of the Herman Melville classic, performed by The Acting Company

Dance

nicholasleichterdance

Thursday, Oct. 25
Featuring Leichter’s latest work, “The Rite of Spring”

African American Dance Ensemble

Saturday, Feb. 2
Featuring Chuck Davis’ new work, “Bluegrass Brown Earth”

Garth Fagan Dance

Thursday, March 13
Led by the Tony-Award winning choreographer of “The Lion King”

Kidstuff

“The Velveteen Rabbit”

Sunday, Oct. 14

“Junie B. Jones”

Sunday, March 16

University Theatre

“A Few Good Men”

Oct. 3-7
by Aaron Sorkin, creator of “The West Wing”

“Dearly Departed”

Nov. 29-Dec. 1
by David Bottrell and Jessie Jones

“Godspell”

Feb. 20-24
by John-Michael Tebelak, with music by Stephen Schwartz

“Rosencrantz & Guildenstern are Dead” and “The Real Inspector Hound”

April 10-20
by Tom Stoppard, performed in repertory (in collaboration with Meredith College)

Prague Institute now open to all students, faculty

NC State’s Prague Institute, which has been offering College of Design classes in the historic capital of the Czech Republic since it opened in 2005, will now be providing the chance for NC State students and faculty members in all colleges to experience this unique learning environment.

Expanded course offerings include those satisfying General Education Requirements (GERs), so that any NC State student can take a summer session or spend a semester in Prague and continue earning credit towards graduation.

Located in a quiet courtyard on Michalska Street just off the Old Town Square in a 14th century building, the Prague Institute has expanded its studio facilities to include lecture and seminar rooms, computer lab, library and an administrative office.

For more information, visit the Web sites of the institute (<http://ncsudesign.org/prague/>), Study Abroad (<http://studyabroad.ncsu.edu/>) and the Office of International Affairs (www.ncsu.edu/oia/index.html). ■

Upcoming programs and courses for 2008:

Spring:

ENG 223 World Literature
ENT 203 Intro to Bees & Beekeeping
FLS 295z Czech Language
LAR 222 Perception and Behavior
Drawing Elective
Landscape Architecture Studio
Costume Design Studio

Summer:

ENG 223 World Literature
FOR 248 Czech Historical Environments
GD 490 Graphic Design Studio
AND 470/570 Fibers and Surface Design Studio



NC State’s Prague Institute, located in a courtyard on Michalska Street in the center of Old Town Prague. The area is one of the main art districts of Prague, and includes numerous galleries, bookstores, cafes, and restaurants.