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COMICS • F4, F5
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THURSDAY, JUNE 29, 2006

Richmond Times-Dispatch
SECTION F

health, science, technology
EXPLORE

Men better at finding angry face in the crowd • F3

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PLUGGED IN

Pando helps e-mail big data files

Nearly everyone is using digital cameras and camcorders these days, but sharing those preserved memories — especially the video — with far-flung friends and family can be a hassle.

Same goes for businesspeople who need to move large presentations or proposals only to find out later their e-mail attachment wasn't received because it was too big.

E-mail simply wasn't designed to ferry large files back and forth across the Internet.

As the size of files we create grows ever larger, alternatives to unwieldy e-mail attachments are springing up. Pando is among the latest

and most interesting approaches to solving the dilemma posed by the need to send large files over the Net.

"Sure, there are a few other large-file transfer solutions out there, but frankly we weren't satisfied with them," the folks at Pando say. "We don't want people poking around on our hard drives, nor do we have the time to create 'social spaces' and keep them updated."

"We could upload our files to some Web site but don't feel right asking friends to 'go fetch.' Then there's the incoming stuff; we especially don't want to have to check in 10 different places for files... our friends want us to see."

To use Pando to send home video, a folder full of high-resolution photos or a mega PowerPoint presentation, you simply download Pando's free software, then drag and drop the files to create a small package that you e-mail to friends, family or business contacts.

The package doesn't actually contain the large files and folders, only a map to them. The recipients of your e-mail receive a link to download Pando's software, and once installed your package can be downloaded.

The only way it could be simpler is if there were no software to download.

Pando is built on an emerging technology called BitTorrent, a file-sharing protocol popular among those on the cutting edge but largely unknown to computer users whose caps don't sport propellers.

The free service successfully merges BitTorrent with e-mail to create something familiar to average computer users while offering a marked improvement over the limitations of e-mail for transporting large files.

Give it a try at Pando.com.



Speed surf Web sessions: Everybody knows the Forward and Back buttons on Web browsers will jump you ahead or back a page, but not everyone knows how to easily skip ahead or back several pages in the current Web session.

Just click the down arrow beside either button to reveal a list of recently visited pages. Then click any page title to jump straight to it.



Maps on your iPod: An easy-to-use Web service, www.ipod-directions.com, lets you put step-by-step driving directions from Yahoo! Maps on any iPod with video, nano or iPod photo without the need for any additional software.

Just type in your starting and destination addresses, then click Verify Directions to see the route Yahoo! Maps suggests.

Assuming the suggested directions meet your approval, clicking the Get Directions button will prompt you to download a ZIP file containing the text and maps.

Extract the ZIP file to the iTunes Photo Folder on your computer, connect and sync your iPod and off you go.

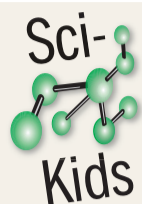
The site allows you to download driving directions to destinations anywhere in the United States or Canada.

• Doug Stanley is a staff writer at The Tampa Tribune in Florida.



Regular activity may ward off sudden heart attack

Jane Brody — F3



Scientific evidence points to glaciers in state's past F6



P. KEVIN MORLEY/TIMES-DISPATCH

Soldiers play out a simulated international conflict during this year's Coalition Warrior Interoperability Demonstration at the Naval Surface Warfare Center at Dahlgren. The soldiers were working with forces in "Arnollia," which bears a striking likeness to California, to protect "Terrizona" from attack.

New obstacles, new answers

Annual exercise allows the U.S. to test communication technology

BY JILL SAKAI
TIMES-DISPATCH STAFF WRITER

DAHLGREN Lights flashed on the brightly colored screens lining the wall of the command center as rows of stern-faced soldiers worked with forces in "Arnollia" to protect "Terrizona" from attack. Arnollia, which bears a striking likeness to the state of California, provided a gateway to Terrizona, which strongly resembles Arizona and New Mexico.

The simulated international conflict was part of this year's Coalition Warrior Interoperability Demonstration at the Naval Surface Warfare Center Dahlgren Laboratory.

The Joint Chiefs of Staff holds CWID (pronounced "cee-wid") annually to test technologies designed to improve communication among U.S. and foreign militaries and civilian emergency agencies. CWID costs \$10 million and involves hundreds of people worldwide. Over two weeks, more than 20 coalition members evaluate 33 systems at more than 25 sites around the world.

More than 90 military personnel and 40 civilians participated in the activities at Dahlgren from June 12-22.

The military constantly encounters new obstacles. Companies submit ideas to address stumbling blocks such as information-sharing and communication.

"Many things [were] not designed to work together," said Navy Capt. Joseph McGettigan, commander of the Naval Surface Warfare Center's Dahlgren Division. "We're now looking for products that will allow them to work together in ways they were never intended to."

Dahlgren was the largest CWID testing site in the U.S. with six demonstrations and 21 trials involving all branches of the military and civilian agencies such as the Federal Emergency Management Agency.

Military personnel assessed the new technologies in two simultaneous scenarios.

In the first, U.S. and NATO-led forces responded to fighting between fictive neighboring countries Nevatah and Terrizona.

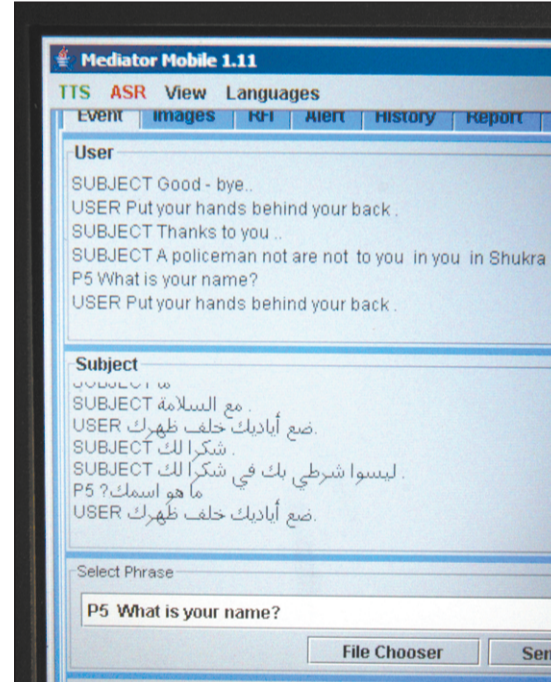
In the second, a homeland-security enactment, Nevatah terrorist groups upset at the foreign U.S. military presence targeted domestic sites, including trains carrying chlorine at Quantico and the Hampton Roads Tunnels.

At the same time, forces prepared for fictional Tropical Storm Anna, poised to batter the East Coast.

Ground forces controlled from Dahlgren coordinated with naval and air-command centers in San Diego and Boston. Together they tested the new products' capabilities as they carried out the planned missions.

Technologies under scrutiny at the Dahlgren site focused heavily on improving communications among groups of responders in military operations or large-scale homeland disasters.

For example, police, fire and military forces use communication systems that cannot talk to one another.



With this voice-operated language translator, an English phrase spoken into the tablet was translated to Arabic on the screen and orally through the tablet's speakers.

Without the ability for different services, agencies and nations to work together, said Navy Cmdr. Ryan Johnson, "What do you get? Mayhem."

Several firms presented software products that link disparate mobile communication devices that normally operate on different frequencies, such as police and military radios, and ordinary cell phones.

"Wouldn't it be nice if this [cell phone] could become a radio? Well, it can," Johnson said. "Instead of a belt full of five radios and a cell phone, you're down to one radio."

Air Force Staff Sgt. Amber Gnemi marveled over another product, a voice-operated language translator smaller than a laptop computer.

A phrase spoken into the electronic tablet prompted an immediate oral translation through the

SEE CWID, PAGE F3 ▶

worth noting ■ staff and wire reports

bad breath

SIMPLE SOLUTIONS: Bad breath often stems from food particles in the mouth, from dry mouth or from a health problem. If you're bothered by bad breath, simple measures often can help.

The June issue of the Mayo Clinic Health Letter offers these tips:

- Brush your teeth or use a mouthwash after you eat.
- Floss your teeth at least once a day. Flossing removes

decaying food.

- Brush your tongue.
 - Drink water to keep your mouth moist. When your mouth is dry, there's insufficient saliva to wash away dead cells.
 - Avoid foods that may cause bad breath.
 - Clean your dentures daily.
 - See your dentist or doctor.
- Bad breath that doesn't respond to simple measures may be related to periodontal disease, an abscessed tooth, an infection, chronic sinusitis, chronic bronchitis, postnasal drip, certain esophageal problems or other conditions.



THE ASSOCIATED PRESS

a new friend

REAL OR ROBOTIC: How do you cope with loneliness and depression?

Buy a robotic dog. That's the idea from engineers at Saint Louis University, who are pioneering the use of robotic dogs in nursing homes.

The study includes a mechanical dog that makes noises and lights up in response to human interactions. It returns to its "cradle" to recharge its battery

when it runs out of juice.

"Some people believe nursing-home residents can get attached to this mechanical animal, and wouldn't it be wonderful not to have the fuss and muss of a living dog?" said William A. Banks, a professor of geriatric medicine.

Banks is studying how residents in nursing homes interact with real and robotic dogs. Subjects are spending weekly sessions for two months interacting with each. They will be ranked on scales that measure their attachment and loneliness.

Men better at finding an angry face in the crowd

NEW YORK TIMES NEWS SERVICE

Trying to get someone's attention? Looking angry may be the key. The face most likely to stand out in a crowd is an irate one, according to a new study, and men are better than women at picking up the anger that a face conveys.

On the other hand, women are more adept at detecting more socially relevant expressions that communicate happiness, sadness, surprise and disgust.

"The really interesting effect," said Mark A. Williams, the study's lead author, "is the difference between males and females."

Williams, a post-doctoral fellow at the Massachusetts Institute of Technology, and his co-author, Jason B. Mattingley, a psychology professor at the University of Melbourne in Australia, set out to measure how efficiently the emotions conveyed by facial expressions are identified in a large group by others.

The results appear in the June issue of *Current Biology*.

In the experiment, they showed arrays of human faces to 78 men and 78 women, using photographs displaying angry, fearful, happy, sad, surprised, disgusted or neutral expressions.

First, participants were shown a group of four photographs depicting three neutral expressions and one expression that was clearly angry — brow compressed, eyes narrowed, teeth flashing in a menacing grimace. The subjects were asked to pick out, as quickly as they could, the angry face from the others.

Then, the scientists used the same procedure while showing the subjects seven faces that were neutral and one that was unmistakably enraged. Some photographs depicted an infuriated man, others an angry woman.

The ease of detecting angry faces depended on the sex of the person in the photograph and the sex of the observer.

Next, the experimenters ran the same tests using fearful faces in place of the angry ones. Among the four or eight neutral faces was one picture of a man or woman, eyebrows raised, eyes wide open with the whites visible, lips pursed — obviously a person who was terrified.

Men and women consistently detected the angry faces more quickly than the terrified ones. But the ease of detecting angry faces depended on the sex of the person in the photograph and the sex of the observer.

The time required to pick out the face of a woman, whether angry or frightened, increased with the rise in the number of photographs from four to eight.

But there was no difference in the speed with which people were able to find the angry man, no matter how many faces were in the array.

Detecting the angry man in a sea of faces, the authors say, has a survival advantage for both sexes. "From an evolutionary perspective," they write, "the potential for physical threat from a male is greater than that from a female."

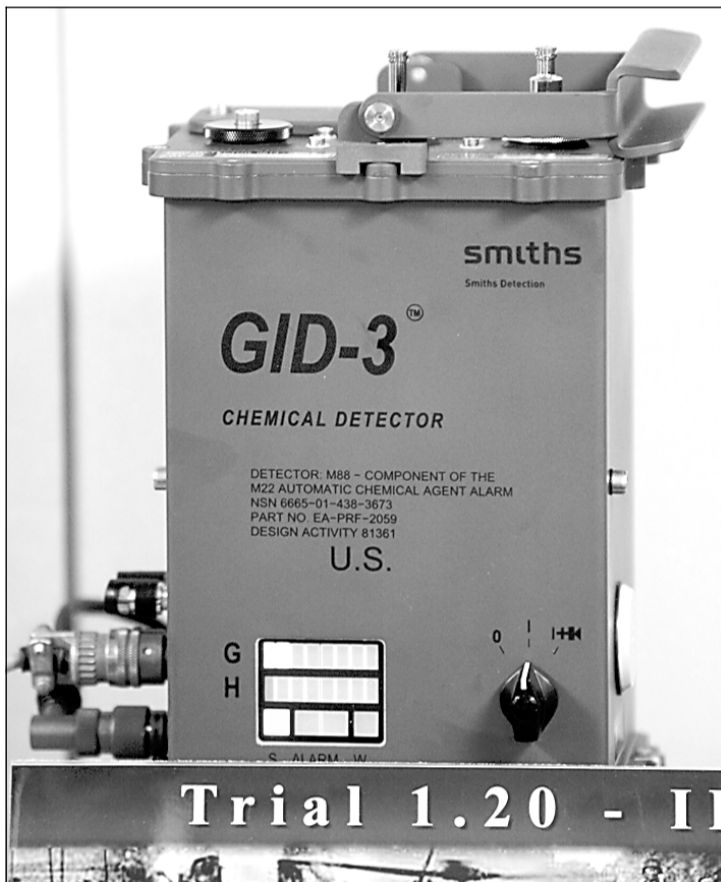
So any perceptual system that helps detect an angry man is an advantage.

Men and women picked out fearful faces with equal facility, but men were significantly faster than women when asked to find the angry face. On the other hand, when participants were asked to use the same procedure to pick out a happy, sad, surprised or disgusted face, women were faster than men.



P. KEVIN MORLEY/TIMES-DISPATCH

Air Force Lt. Jimmie Rivera (center) explains the capabilities of Buster, a 13-pound computer-controlled spy plane that can fly up to 10,000 feet and through 60 mph winds. When signaled to land, Buster deploys its own parachute to float safely to the ground.



A remote chemical-detection system that could alert a computer system of danger was evaluated at CWID.

CWID

— FROM PAGE F1

tablet's speakers. The system can understand and translate 32 languages, including Farsi and four dialects of Arabic.

"Imagine how helpful that will be in the field," Gnessi said.

Outside in the parking lot, service members showcased Buster, an unmanned aerial vehicle.

Despite looking like a grown-up's model airplane, Buster is a sophisticated scouting machine with cameras that can send live video feed to monitors on the ground.

The 13-pound computer-controlled spy plane can fly up to 10,000 feet and through 60 mph winds. When signaled to land, Buster deploys its own parachute to float safely to the ground.

"It's very tactical," said Air Force First Lt. Jimmie Rivera. "You can send it to use with convoys to look out for ambushes."

If a product performs well in the simulated operations, the government might buy the technology.

"In a perfect world," said Marine Col. Howard Thomas, some of the gadgets could be out in the

field in 18 to 24 months.

Several technologies tested at CWID in past years have moved into operation at home and abroad.

A secure network server evaluated at CWID 2004 is now used to improve information flow between government and civilian emergency-response organizations.

Another CWID-tested product, an incident commanders' radio interface, is used for disaster-relief efforts by agencies such as the Department of Homeland Security, Louisiana National Guard and local police and fire departments.

Back in the Naval Command Center at Dahlgren, operations were well under way. From a computer terminal, two officers identified a target on the shore of Arnoia and prepared to deploy rocket-boosted naval gunfire to eliminate the threat.

As the commander gave the order to fire, the room shook with the booming of virtual guns.

• Contact staff writer Jill Sakai at jsakai@timesdispatch.com or (804) 649-6860.

• Times-Dispatch staff writer Peter Bacqué contributed to this report.

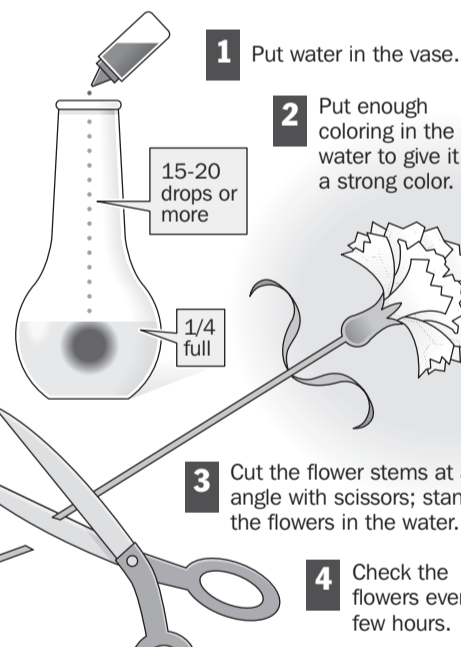
Try this

Choose a color for a flower

If you want to change a flower's color, you can paint it a new color or use this method, which looks more natural.

You'll need:

- One or more white carnation flowers
- Flower vase or tall water container
- Red or blue food coloring
- Scissors



SOURCE: Kidzone Fun Facts for Kids

The Children's Museum of Richmond performs these experiments every Sunday at 3 p.m. Schedule subject to change. Call 804-474-CMoR (2667) or visit www.c-mor.org for details.

What happened?

- Coloring moves up the stem into the flower's petals, which change color.
- A flowering plant gets its water from the ground.
- Water flows through tiny tubes in the stem up into the plant's leaves and flowers.

HELEN LEE MCCOMAS, PAUL TRAP/NIGHT RIDDER TRIBUNE

July 2006 Sky Watch



A monthly feature prepared by Ken Wilson of the Science Museum of Virginia.

To use the sky chart: The chart shows the brightest stars and planets that can be seen two to three hours after sunset. The edge of the circle represents the horizon, and the center is the point of the sky directly overhead. Hold the chart so that the direction you are facing is at the bottom.

■ **CONSTELLATIONS:** You'll find the Big Dipper, which has a flat bottom and a bent handle, in the northwestern sky. Officially, the Big Dipper's seven stars belong to the much larger group known as the constellation Ursa Major, the big bear.

Follow the curve of the Big Dipper's handle away from the bowl to a very bright star called Arcturus, the brightest star of Boötes, the herdsman. When connected, the stars of Boötes look like a kite, with the tail attached at Arcturus.

Other stellar symbols of the season are the three stars of the Summer Triangle (Vega, Deneb and Altair) high in the eastern sky. Brightest is Vega in the tiny constellation Lyra, the harp. Deneb anchors one end of a cross-shaped star pattern known as Cygnus, the swan. Lowest of the triangle stars, Altair, is the brightest star in Aquila, the eagle.

Two other important summer constellations lounge along the southern horizon. The hook-shaped constellation Scorpius, the scorpion, has a bright reddish star called Antares. Following the scorpion to the left is the teapot-shaped arrangement of stars known as Sagittarius, the archer. From a dark location, you'll see what looks like a cloud of steam escaping from the teapot and stretching across the sky to the northeast. This fuzzy band of light is the Milky Way.

■ **PLANETS:** Venus is low in the east-northeast at dawn's early light. Jupiter is in the southwest right after sunset. Mars and Saturn are low in the west-northwest right after sunset during the first half of the month.

■ **CELESTIAL EVENTS:** Earth reaches aphelion (its farthest point to the sun) on July 3. The moon will be near Jupiter on the evening of July 5. The moon will be near the star Antares on the evening of July 7. On July 20, the moon will be next to the Pleiades star cluster. Mars will be close to the star Regulus on the evening of July 21. The South Delta Aquarid meteor shower peaks in the early morning hours of July 28.

- **MOON PHASES:**
 - First Quarter, Monday, July 3
 - Last Quarter, Monday, July 17
 - Full Moon, Monday, July 10
 - New Moon, Tuesday, July 25

Copyright: 2006 Science Museum of Virginia

TIMES-DISPATCH

YOUR PERSONAL HEALTH

Regular activity may ward off sudden heart attack

When you hear about someone who has suffered a heart attack while jogging, the likely assumption is that jogging is dangerous to the heart. But is it?

The answer is somewhat paradoxical. While jogging, a person — especially someone with underlying heart disease — is more likely to die than if that person

were walking or resting at that same moment. During vigorous exercise, the heart can develop an irregular beat, blood pressure can rise to a dangerous level, or plaque from a partly clogged artery can break off and stop blood flow.

But — and this is a big but — overall, people who jog, including those with major cardiac risk factors, are less likely to have a heart attack than if they had not been joggers.

The heart is a muscle, and like any other muscle, exercising it makes it stronger. It does not have

to work as hard to get the job done. This is what is meant by conditioning the heart through moderately vigorous physical activity.

Conditioning occurs by exercising at a level that gets your heart rate within a target zone determined by your age (subtract your age from 220, then take 50 percent and 75 percent of that number to determine your zone).

A well-conditioned heart can pump in 50 beats the same amount of blood that the heart of a sedentary person would pump in 75 beats. In addition, during rest, a conditioned heartbeat is slower.

Among the major factors that increase a person's chance of developing coronary artery disease, the underlying cause of most heart attacks, are an elevated cholesterol level, high blood pressure, obesity, diabetes and undue stress.

The beauty of regular physical exercise is that it counters every one of these risk factors. Exercise also raises blood levels of HDL cholesterol, which helps to cleanse the arteries of deposits. The main risk factors exercise cannot change are family history and age. These two factors can serve as a warning.

If you have a family history of premature heart disease (heart attacks in first-degree relatives that occurred before 65), or if you are middle-aged or older and have been fairly sedentary for years, you would be wise to undergo a physical exam before taking up jogging.

In the course of nearly every marathon, one or more runners keel over with a heart attack, and some die. Heat and dehydration are often contributing factors.

The lesson here is to take reasonable precautions against sudden death:

- Make sure all cardiac risk factors — especially smoking — are absent or under control.
- If you have been sedentary or have any doubts about your cardiac well-being, get checked out beforehand.
- Establish a sensible training program. All your muscles, not just your heart, need to be up to the stress.
- Run or walk at your own pace (the marathon is a race for only a few young, elite athletes).
- Stay well-hydrated with water at first, then with a sports drink if you sweat heavily or exercise for two or more hours.
- Pay attention to warning signs. If you experience upper-body discomfort or pain that could be a symptom of coronary insufficiency during the activity, stop immediately and seek medical attention.

Symptoms that should not be ignored include palpitations; pain, pressure or discomfort in the chest; dizziness or lightheadedness; shortness of breath; and nausea.

In addition, if you find during your normal workout that you are getting more winded or fatigued for no apparent reason, that is a signal to get yourself examined.

People with advanced heart disease are at risk of dying suddenly whether they exercise or not. But while vigorous exercise can precipitate a heart attack during a workout and for about an hour afterward, regular physical activity is an important preventive of sudden cardiac death.

In the long run, various studies have found, jogging adds years to life. Overall, each hour spent exercising (up to 30 hours a week) adds about two hours to a person's life expectancy, according to the Harvard Alumni Study, which has tracked deaths among 17,000 men for more than two decades.

Even those who did not start exercising until midlife had a 23 percent lower risk of death over the next 20-odd years. Endurance activities, such as running, cycling, lap swimming, brisk walking and cross-country skiing, conferred the greatest benefit, adding six years of life expectancy over that of a couch potato.

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METRO & Business

Richmond Times-Dispatch THURSDAY, AUGUST 3, 2006

www.TimesDispatch.com

Tax holiday may come as a surprise

WOODBRIDGE
Shoppers at the famed Potomac Mills center yesterday may have been unaware.

Or maybe just bad at math. Didn't the carloads of shoppers know that by waiting until tomorrow, they could avoid paying tax?

Maybe yes, maybe no. Virginia's first sales-tax holiday, which runs tomorrow through Sunday, isn't quite a state secret.

But it isn't exactly on shoppers' tongues, either.

"It's probably like 50-50," Old Navy Outlet store manager Raymond Tressler said when asked how many seem aware.

Sales have been down a little, he added, perhaps because shoppers are waiting to save the 5 percent. "Our regular customers we're not seeing this week. Mostly what we're seeing is tourists." But construction work in the shop next door also dissuades shoppers, he added.

Tressler hopes for a huge weekend, also boosted by coupons and sale prices. Normally, 42 employees work over a weekend. This time, there will be 87 — or everyone who's available. "We definitely have all hands on deck," he said.

Mitch and Pam Dudley of nearby Dale City nonetheless were shopping at Old Navy yesterday. They bought three pairs of flip-flops "plus this is a really good deal on the polo shirt," Pam said.

Did they know they could have saved taxes two days later?

"I hadn't heard anything about it," Mitch Dudley said. He had been recently hospitalized, and the family had just returned from an Outer Banks vacation, he said. Nor do they have cable TV, he emphasized.

The Dudleys may be nearly as much the norm as the exception.

Latoya Devico, assistant manager of merchandizing at Polo Ralph Lauren, noted the store has door signs telling customers of their expanded hours for the tax-free weekend.

Yet, "I still don't think they're aware," she said, "because this is the first time in Virginia.

They know other states have done it." Pre-weekend shopping has not fallen

off at all, Devico added, though a sale was under way.

For the next three days, Virginia will waive sales tax on individual school supplies (even if not used for school) costing no more than \$20 and on shoes or clothing costing no more than \$100.

Bobby Maddox Jr., general manager of Foot Locker, said he wouldn't be surprised if the parent company put some shoes on sale for \$99.99.

Foot Locker hadn't seen a pre-weekend drop, either, Maddox added yesterday. But the store has posted no-tax signs. "We're trying to get some excitement. We expect it to be very big."

Some shoppers knew.

Helen Farmer of Suitland, Md., said the tax holiday was a big incentive — yet she had bought all her daughter's school clothes at Potomac Mills yesterday. They were 25 percent off. "I saved \$50," she said.

Likewise, Richmonder Linda Clippis bought "a pair of shoes that were ridiculously low-priced." Clippis is aware of the tax-free days. She's a teacher and will be buying school supplies over the weekend.

Nancy Blair of Springfield said her church is urging members to buy school supplies for the needy this weekend. She would take advantage of the holiday for that, though not for clothing. Her son and a friend each bought a polo shirt yesterday. "It wasn't a big purchase," Blair insisted.

"We just came in to get out of the heat."

So, 25 percent off is good. But 30 degrees off is better.

• Contact staff writer Ray McAllister at rmcallister@timesdispatch.com or (804) 649-6333. His column runs Tuesday, Thursday and Saturday. Responses may be printed from time to time.

Henrico landowner can proceed with suit in zoning dispute B3

IN BUSINESS

FEDS RAIL AGAINST RAMBUS: Its patent conduct with memory chips is ruled deceptive PAGE B7

Lambert pulling out of 3rd District race for School Board B3

the school of **ROCK**



DEAN HOFFMEYER/TIMES-DISPATCH

Samantha Zunich, 14, is taking part in the Guitar Works Summer Sessions, a sort of rock camp for middle and high school student musicians who have been playing an instrument for at least a year.

At rock camp, it's a gas, gas, gas

Guitar instructor helps young musicians learn to rehearse together

BY WILL JONES
TIMES-DISPATCH STAFF WRITER

After singer Bono shouted out "uno, dos, tres, cat-orce!" the trio of guitarists launched into power chords and matching riffs as they played along to U2's "Vertigo."

They had rehearsed the rocker for a good half-hour when one of them spoke up.

"It sounded like we were a little out of tune on the high parts," 14-year-old Chris Thoma said.

With that, they were reminded that tuning — something they had forgotten to do — is a ritual practiced by many successful bands.

Welcome to rock camp — where young, aspiring musicians can learn the 101 of playing in a band.

Jay Mullens, a guitar instructor at Guitar Works in Carytown, started the summer sessions three years ago after seeing a need to show student guitarists, bass players and drummers how to rehearse together.



He said some of them were taking "lessons with no end," while others had tried to form their own bands but didn't know what to do, he said.

"They'd get three friends and said they were a band but never played," Mullens said. "The idea is to get out of the garage and into the street," he said, with gigs at pool parties or battle-of-the-bands competitions.

The Guitar Works Summer Sessions are suited for middle and

SEE ROCK, PAGE B5 ►

"The idea is to get out of the garage and into the street."

JAY MULLENS
GUITAR INSTRUCTOR

See a video with this story on the Metro & Virginia page of

TimesDispatch.com

Dark-skin skin cancer might be more severe

Although the disease is less common than in whites, blacks die in disproportionate numbers

BY JILL SAKAI
TIMES-DISPATCH STAFF WRITER

Skin cancer may be more severe, though less common, in people with dark skin than in those with light skin, according to new research.

Dr. Hugh Gloster, a dermatologist at the University of Cincinnati and lead author of the study, examined skin-cancer data from around the world from the past 50 years. He presented his findings last week at the summer meeting of the American Academy of Dermatology in San Diego.

"Most people think skin cancer doesn't occur in skin of color," said Gloster, who is black. "These cancers do occur in people of color, and when they occur, they tend to be more deadly."

The three main types of skin cancer, squamous- and basal-cell carcinomas and melanoma, occur in different cell types in the skin.

Gloster found that basal-cell carcinoma occurred most often in whites, Hispanics and East Asians, while squamous-cell carcinoma was most common in blacks and Asian Indians. Melanoma was the least common but most deadly type in all races.

Despite much higher frequency of skin cancers in whites compared with blacks, a disproportionately large percentage of blacks died as a result of their skin cancers, Gloster said.

He and other experts say part of the issue is a lack of awareness that skin cancer can afflict those with darker skin, which leads to delayed or missed diagnoses.

"Blacks aren't expecting that they'll have it, so by the time it's brought to someone's attention, it usually is at a little more advanced stage," said Virginia Commonwealth University's dermatology chairman, Dr. Algin Garrett, a skin cancer

SEE CANCER, PAGE B2 ►



Gloster

INSIDE

What are the three types on skin cancer? PAGE B2

Annual meeting incorporates hip-hop Mass

Episcopalians gather at St. Paul's to enjoy some powerful worship

BY TOM CAMPBELL
TIMES-DISPATCH STAFF WRITER

The big organ in the balcony remained silent, but the sanctuary rocked like never before last night at St. Paul's Episcopal Church's first-ever hip-hop Mass.

Gospel rappers and youthful singers and dancers attending the annual meeting here of the Union of Black Episcopalians rehearsed, starting at 4 p.m., for the Mass that rewrites some of the traditional words and replaces the traditional music with a thumping hip-hop beat.

Acting as a sort of producer of the sacred show was the Rev. Timothy Scott Holder, 51, an Episcopal priest from the South Bronx, N.Y., who started the hip-hop movement in the Episcopal Church.

He calls it HipHopEMass and goes by the hip-hop nickname "PoppaT."

"Here where Jefferson Davis prayed, these rappers pray today," Holder said while watching the rehearsal. Even in hip-hop style, singing and dancing can express "the beauty, the wonder, the love of God."

The Rev. Vincent Hodge, an Episcopal priest with a church in West Point, was in the sanctuary for the rehearsal and said he, too, backs the hip-hop movement. The music gets the Christian message across, "and it's a way to get young peo-



Holder

SEE HIP-HOP MASS, PAGE B6 ►

VIRGINIA

/ www.TimesDispatch.com /

STATE BRIEFS

FROM WIRE AND STAFF REPORTS

Bacteria level brings Va. Beach advisory

VIRGINIA BEACH — High bacteria levels forced officials yesterday to issue a swimming advisory for the North End, the third such warning of the season.

Public health officials issued the warning for the waters between 54th and 71st streets, but the beach remained open.

Officials will sample the waters again today to determine if the bacteria levels are within acceptable levels, said Skip Scanlon, environmental health manager for the Virginia Beach Public Health Department.

Exposure to increased levels of bacteria can cause gastrointestinal and skin illnesses.

Pool chemical mix-up sends 8 to hospital

NEWPORT NEWS — Seven children and a pool contractor were taken to the hospital yesterday when the contractor mistakenly mixed two chemicals, releasing toxic gas.

The Colony Community Pool was evacuated about 4:15 p.m. after the contractor mixed sulfuric acid and chlorine in a bucket, said Dana Perry, a spokeswoman with the Newport News Fire Department.

The gas created by the chemicals caused respiratory problems in the contractor and the children, who were not identified.

All eight had minor respiratory complaints, Perry said.

Six of the victims were taken to Riverside Regional Medical Center and were treated and released, hospital spokesman Peter Gagola said. The status of two others taken to Mary Immaculate Hospital was not available.

About 45 firefighters, paramedics and a hazardous-materials team responded.

Two men sentenced in investment scheme

LYNCHBURG — Two men have been sentenced for running a fraudulent investment scheme that bilked at least nine people out of more than \$2 million.

Charles Gilman Lowry, 74, of Lynchburg was sentenced last month in U.S. District Court to two years and nine months in prison on one count each of wire fraud and conspiracy to commit wire fraud.

Charles Monroe Grooms, 46, of Madison Heights was sentenced to two years and six months in prison on the same charges plus one count of health-care fraud for lying about his income when applying for Medicaid and food stamps.

Lowry and Grooms were charged in February 2005 with persuading at least nine people from 1999 to 2004 to give them about \$3 million for what they said were risk-free opportunities, promising returns of up to 25 percent through their company, High Yield Inc.

Lowry and Grooms played on the investors' Christian faith to gain credibility, prosecutors said.

Lowry defended the investment plans as legitimate opportunities that didn't pan out. Lowry's attorney, Paul Beers, said Lowry himself was defrauded by others involved.

Lowry and Grooms had faced more than a dozen charges and decades in prison. In exchange for the pair's guilty pleas in January, prosecutors dropped most of the charges and agreed to seek a relatively light sentence.

The two must pay back more than \$2 million still owed to their investors.

Bush taps O'Grady for federal bench

Liam O'Grady, a U.S. magistrate judge in Alexandria, has been nominated by President Bush for a federal judgeship in Alexandria.

He would take the seat of U.S. District Judge Claude M. Hilton, who was to take senior status.

O'Grady was one of five individuals recommended to Bush by U.S. Sens. John W. Warner and George Allen, both Virginia Republicans. Now that he has been nominated for the Eastern District of Virginia judgeship, he must undergo confirmation by the Senate.

McDonnell targets old regulations

Attorney general starts task force to consider unneeded state rules

BY MICHAEL HARDY
TIMES-DISPATCH STAFF WRITER

Standing next to a table stacked with binders containing 24,000 pages of state regulations, Attorney General Bob McDonnell told a cautionary tale yesterday.

"If a college president wants to put up a tent over 900 square feet on campus," McDonnell said, the president must fill out a request and send it, along with \$50, to Richmond for it to be reviewed before a permit is granted.

McDonnell declared war on unnecessary and outdated state administrative rules that he says rob Virginians of their freedom and cost businesses and consumers dearly. "Regulations are a hidden tax," he said.

To begin a comprehensive review of Virginia's regulatory climate, McDonnell established a 25-member task force that will comb through the web of administrative rules. It will recommend

modification or elimination of rules it deems unnecessary.

The attorney general, a likely candidate for the GOP nomination for governor in 2009, said suspicions that it will be just another bureaucratic study are inaccurate.

It will be long term and one of the most important initiatives during his four-year tenure, McDonnell said. While campaigning last year to be attorney general, he promised to reform state administrative regulations.

The first three areas to be investigated are state agency regulations affecting health care, agriculture and small businesses.

Fairfax lawyer John Rust, a former state Republican delegate, will lead the task force that will meet quarterly to consider recommendations from other panels studying rules in those areas.

"This is not an attack on regulations," Rust said. "But many are outdated and outdated. . . . It will

be a systematic and careful review" of the state's administrative system.

Chief officials of Gov. Timothy M. Kaine's administration also will participate in the work. Democratic and Republican state lawmakers will serve on the investigative panels, as will representatives of businesses and industry.

There also will be an opportunity for the public to comment on its recommendations, McDonnell said.

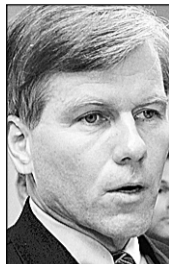
The first set are due early next year.

Because the rules are largely administrative — they do not require legislative action — it would be left to Virginia's agencies and departments to accept or reject the recommendations of the task force.

Kaine spokeswoman Delacey Skinner said her boss supports McDonnell's effort.

"A lot of agencies have started doing their own work, including the tax department, which has done it on duplicative regulations," Skinner said. The department has proposed just fewer than 300 for elimination, she said.

• Contact staff writer Michael Hardy at mhardy@timesdispatch.com or (804) 649-6810.



McDonnell

Webb urges changes in campaign-finance law

BY TYLER WHITLEY
TIMES-DISPATCH STAFF WRITER

Democratic U.S. Senate candidate Jim Webb turned a kitchen table into a bully pulpit for campaign-finance reform yesterday.

After writing about politics for years, Webb is now making his first run for public office.

"The biggest surprise to me is how much money does politics," he told five Richmond-area Democrats gathered around a kitchen table at a home in the Dorset Woods subdivision off River Road. "The amount of time that has to be spent raising money rather than dealing with policy issues is really perverting the American political process."

Webb is trailing the Republican incumbent, Sen. George Allen, badly in fundraising. At the end of June, Allen had about \$6.6 million in his campaign treasury, while Webb had about \$434,000.

Webb said campaign-finance reform, which limits the size of contributions in federal elections, has not worked. If elected, he said he planned to work on further reforms.

Webb has been holding a series of kitchen-table discussions with small groups of residents around the state to find out what is on their minds.

April Cain, a stay-at-home mom and freelance writer, made her home at 105 N. Erlwood Court available to the candidate for the Richmond-area segment of the four-day tour.

While Webb met with only a few people, his visit here attracted newspaper reporters and television stations from Richmond and Washington. This is known in the political trade as free media, a valuable commodity for a candidate in need of money.

It was Cain who brought up the question of money in politics.

Cain, who worked in a government-relations job in Kentucky before moving to Richmond, said, "I was frightened when I realized that even at the state level, the role of money in political contributions, how that can play in administrative appointments."

Pat Dunn, a Hanover County home-repair contractor, said, "Congress today thinks they are basically for rent, by caucuses, by lobbyists, by corporations."

Money was not the only concern among the five people, none a Democratic activist, who had been assembled by local supporters of Webb.



LINDY KEAST RODMAN/TIMES-DISPATCH

Democratic U.S. Senate candidate Jim Webb talks with a group of Richmond-area Democrats around a kitchen table at a home in the Dorset Woods subdivision off River Road.

They worried about the war in Iraq, stagnation of middle-class wages, health care and the environment.

As they went about the table telling Webb of their concerns, none blamed Allen for the problems, although afterward, several dismissed him as a rubber stamp for President Bush.

Webb repeated his campaign themes: he wants to withdraw troops from Iraq as soon as possible; he wants to discourage outsourcing of American jobs; he backs a GI Bill of Rights for Iraq war veterans that would be similar to the bill that allowed millions of Americans to receive a free college education after World War II.

"Whatever it costs, we are going to get the money back" in terms of a better-educated citizenry, he said.

Allen will embark on his own listening tour Monday, a tour he has taken for 11 years.

• Contact staff writer Tyler Whitley at twhitley@timesdispatch.com or (804) 649-6780.

Louisa woman to serve five years for identity theft

A Louisa County woman will serve five years in prison after pleading guilty yesterday to six counts of identity theft.

Dawn Cherie Rumsey, 36, pleaded guilty to the charges before Louisa Circuit Judge Timothy K. Sanner. He sentenced her to 45 years, suspending all but five, and ordered her to pay the victims almost \$30,000 in restitution.

It is the first time the attorney general's office has participated in prosecuting a case of identity theft. The victims came from around the state. Rusty McGuire, a member of the office's computer-crime unit, argued the case.

Attorney General Bob McDonnell and Louisa prosecutor R. Don Short announced the convictions and sentencing of Rumsey on three counts of identity theft and

three counts of committing computer fraud with the identities.

Rumsey used various schemes to obtain the identifying information of strangers, a neighbor and a family member.

In one case, she was in a traffic accident with a couple. When she exchanged information with the couple, she noticed and recorded the Social Security number from the driver's license.

In another instance, she illegally obtained a neighbor's mail and gathered information from it to commit theft. She used others' Social Security numbers and other information to apply for credit cards over the Internet.

With the cards, she went on a shopping spree and ran up a bill of almost \$30,000.

— Michael Hardy

Tests of artificial blood end at VCU

The controversial research involved unknowing patients

FROM STAFF REPORTS

A study of a controversial experimental blood substitute has concluded patient enrollment, officials at Northfield Laboratories and VCU Medical Center announced this week. Research results are expected in the fall.

VCU was one of 32 hospitals around the country taking part in the study of PolyHeme, which was given to bleeding trauma patients.

The research raised ethical issues because people were not asked for specific permission to be given the substance. Usually, researchers must explain the risks and advantages of the research in detail and obtain signed, informed consent from each person who participates.

Because critically injured trauma patients usually are not able to talk or understand what is going on around them, federal officials have created a waiver that allows researchers to do some studies, such as those in emergency medicine, without requiring patients to agree to participate. That research is undertaken under strict protocols

that are overseen and monitored by a research review board.

The VCU portion of the study enrolled about 40 patients who randomly received PolyHeme or the current standard of care — salt water — to replace lost blood and fluids.

In Richmond, PolyHeme was administered by Richmond Ambulance Authority emergency medical personnel at the scene of the injury or in the ambulance. Patients continued to receive it during a 12-hour post-injury period in the hospital.

Ethicists also have raised concerns about continuing to give PolyHeme to patients after they were at a hospital, where blood for transfusions was available.

The study began locally in fall 2004. A series of public meetings in the Richmond area were held to inform the community of the research. About 50 people opted out of the study by obtaining a special bracelet. Now that the study has ended enrollment, anyone wearing an opt-out bracelet can remove it.

On its Web site, Illinois-based Northfield Laboratories, which makes PolyHeme, disputes news reports that it discouraged publication of results of clinical trials that might raise questions about the blood substitute's safety.

Downtown Richmond is no longer down. The city is popping with new construction and renovation projects. See Discover Richmond coming Aug. 6

REWARD UP TO \$1,000

Chesterfield/Colonial Heights Crime Solvers pays for information leading to the arrest and indictment of suspected criminals or the capture of wanted persons.

CRIME OF THE WEEK

This week, Crime Solvers needs your help to catch two women who used a stolen debit card at three area stores.

On June 23, a woman reported to Richmond police that her debit card had been stolen in the Richmond area. A few days later, the victim's bank informed her the card had been used to purchase items in Chesterfield County between June 23-24.

The victim's card was used twice at Wal-Mart, 900 Walmart Way, on June 23. Nearly \$300 in merchandise was charged to the account. The card was used again on June 24 at the Wal-Mart at 12200 Chattanooga Plaza, as well as Jewelry Place in Cloverleaf Mall. Nearly \$500 was charged to the account.

Investigators reviewed Wal-Mart surveillance tapes and captured photos of the suspects. You can view a photo of the suspects on our Web site at www.crimesolvers.net.

If you have any information about these crimes, or any crime or wanted person in your school or community in Chesterfield County or Colonial Heights, you can call Crime Solvers at (804) 748-0660. You do not have to identify yourself when you call, and if your tip helps solve a crime, you could receive a cash reward of up to \$1,000.

The Chesterfield County/Colonial Heights Crime Solvers Inc. is a 501 (c) 3 organization that relies on donations to continue providing its anonymous tip-reporting program. No county or city tax dollars are used to fund the program. If you would like more information about Crime Solvers, please visit our Web site at www.crimesolvers.net, or call the business office at (804) 748-1278.

Cancer

— FROM PAGE B1

specialist who is black.

To compound the problem, he said, "The prognosis for a black and a white person with similar disease — especially melanoma — is worse in blacks and we're not sure why that happens."

When it comes to melanoma, said Garrett, late diagnosis can mean death.

In whites, melanomas have been linked to intense exposure to ultraviolet light and nearly always occur in sun-exposed areas. For unknown reasons, melanomas in skin of color are less dependent on UV exposure. They appear predominantly in specific areas, including the soles of the feet, palms of the hands, under the fingernails, and sites of scarring or inflammation.

"These are very aggressive melanomas," said Rhode Island Hospital dermatologist and cancer expert Dr. Charles McDonald, who is also black. "It's a devastating kind of cancer, and it certainly occurs more frequently, in my experience, in the darker races than the other two cancers."

Darker skin pigment seems to protect against basal- and squamous-cell carcinomas but not

Skin cancer types

Squamous-cell carcinoma:

- affects flat cells at the surface of the skin;
- most common skin cancer in blacks and Asian Indians;
- usually occurs in areas not exposed to sun.

Basal-cell carcinoma:

- affects round cells deeper in the skin;
- most common skin cancer in whites, Hispanics, Chinese and Japanese;
- usually occurs in sun-exposed areas.

Melanoma:

- affects pigmented skin cells deep in the skin;
- least common skin cancer but usually most severe;
- in whites, usually occurs in sun-exposed areas; in darker races, usually occurs in non-sun-exposed areas.

SOURCES: National Cancer Institute, the University of Cincinnati

against melanomas, McDonald said. However, other risk factors, such as heredity, mean that all people should be vigilant about checking for skin cancer.

In addition to the importance of recognizing and treating skin cancers, other health officials also urge people to use preventive measures.

For the first time this year, an annual summer health campaign run by the National Alliance for Hispanic Health includes a focus on ways to prevent skin cancer, said spokeswoman Marcela Gaitan.

People of all ages and races should be aware of risks, agreed Theresa Teekah, manager of the Virginia Health Department's Cancer Control Project.

By targeting awareness campaigns to schools and churches, Teekah hopes to reduce skin cancer by influencing people's behaviors. Said Teekah, "This is one of those cancers that is 100 percent preventable — why suffer?"

• Contact staff writer Jill Sakai at jsakai@timesdispatch.com or (804) 649-6860.

E

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health, science, technology
EXPLORE

Richmond Times-Dispatch THURSDAY, AUGUST 10, 2006

Eating Vicks VapoRub
could harm a fetus • E3

www.TimesDispatch.com



Doug Stanley

Google Spreadsheets program may challenge Microsoft's Office E3

Try this

See how heat escapes from a small and a large cooking pot E3



Sci-Kids

Sea horses might be world's greatest dads E6



DAVID BUSBY/TIMES-DISPATCH

The space-tourism industry aims to make flights a reality — for a price

BY JILL SAKAI
TIMES-DISPATCH STAFF WRITER

Will your vacation packing list ever include a spacesuit and a pair of moonboots? A fledgling space-tourism industry aims to make out-of-this-world experiences — previously available only to highly trained professional astronauts — a reality for customers able to pay the hefty price. Venturing beyond the pages of science fiction, a handful of entrepreneurs have shown that private-sector space travel is possible — but what will allow commercial spaceflight to get off the ground?

Built on dreams

Historically, manned spaceflight has been the realm of the government. President Dwight D. Eisenhower founded NASA in 1958 as a scientific and engineering research agency.

NASA's first 25 years achieved such landmarks as putting the first humans on the moon in 1969 and launching the space-shuttle program in the 1980s. More recently, NASA's manned missions have settled into routine trips to ferry equipment and crew to the International Space Station.

The past decade has seen a push toward privatization of space travel and the beginnings of a commercial spaceflight industry.

As a child, Eric Anderson dreamed of becoming an astronaut. Shortly after finishing a degree in aerospace engineering at the University of Virginia, he did the next best thing — he started a company to help other civilians experience space.

Founded in 1997, Space Adventures partnered with the Russian space program to provide the first opportunities for civilians to reach orbit.

"When we first started, space tourism really wasn't that credible. It was just talk," Anderson said. "And now it's reality."

The Northern Virginia company vaulted into the limelight in 2001 by sending the first paying customer into space.

American businessman Dennis Tito paid \$20 million for the opportunity to blast into orbit on the Russian craft Soyuz and spend six days aboard the space station.

South African Mark Shuttleworth went in 2002, followed by University of Virginia-educated Greg Olsen in 2005. A fourth space tourist, Japan's Daisuke Enomoto, is scheduled to launch next month.



Anderson

SEE SPACE PAGE E3 ▶

worth noting ■ staff and wire reports

healing wounds

KEEP IT MOIST: Most parents and school nurses have a time-honored approach to treating a small wound: Clean it up, stop the bleeding and then let it get some air.

But over the years, researchers have found that what many people know about treating small cuts and scrapes is wrong.

Exposing a wound to the air so it can breathe is a terrible mistake, experts say, because it creates a dry environment that promotes cell death.

A handful of studies have found that when wounds are kept moist and covered,

blood vessels regenerate faster and the number of cells that cause inflammation drop more rapidly than they do in wounds allowed to air out. It is best to keep a wound moist and covered for at least five days.

Another common mistake is applying antibiotic ointments, said Dr. Mark D.P. Davis, a professor of dermatology at the Mayo Clinic in Rochester, Minn.

These ointments may keep the wound moist, he said, but they also can lead to swelling and an allergic reaction called contact dermatitis. Plain and simple Vaseline, applied twice a day, works fine.



2000, TIMES-DISPATCH

a little wobbly

SMALL SHIFTS: Late last November, as a big low-pressure system built over Europe and Asia and high pressure settled in over the Pacific and Atlantic oceans, the shifts in the atmosphere caused the Earth to jiggle ever so slightly, like a hiker adjusting to a shifting load in a backpack.

As a result, the North Pole and its southern counterpart moved about 4 inches by one measure.

As the atmosphere shifts, it influences the Earth's rotation, so scientists theorized for 20 years, until the recent

advent of the global positioning system of satellites made confirmation possible.

There were well-known, regularly occurring wobbles in the Earth's rotation that could shift the poles 30 feet over a year or more. These shifts blocked the detection of subtler, quicker movements caused by day-to-day changes in the atmosphere and the oceans.

Now these small shifts are being measured by institutions devoted to tracking the planet's behavior, including the earth orientation department of the U.S. Naval Observatory and the "time, Earth rotation and space geodesy section" of the Royal Observatory of Belgium.

Space

— FROM PAGE E1

These pioneers of commercial spaceflight trained for months alongside cosmonauts in Russian facilities, becoming versed in safety and emergency procedures.

The physical aspect wasn't too difficult, Olsen said of his training. "The hardest part of the deal for me was trying to learn Russian."

To someone who grew up watching the American-Russian space race, it was the experience of a lifetime. "When that rocket took off, I was the happiest person alive," Olsen said. "Floating in space — it was just magic."

Was it worth it? "It sure was," Olsen said. "I'd do it again in a heartbeat."

Incentive and innovation

While Space Adventures uses existing equipment to build a market for space experiences, other enterprises see new technology as the future of the industry. Several dangle large sums of money as enticement for development of novel space-transport vehicles.

In 1996, the X Prize Foundation offered a \$10 million award for the first team to send a manned commercial craft at least 60 miles into the atmosphere twice in two weeks. The prize was snagged in 2004 by an airplane-launched vehicle called SpaceShipOne.

Bigelow Aerospace is now sweetening the deal with "America's Space Prize," a \$50 million prize offered for the first private craft to complete two orbital missions, reaching about 250 miles above Earth, in two months with at least five people onboard. The prize is still unclaimed.

Even NASA is adding fuel to the fire of private space adventures. In January, NASA announced a competition to provide up to \$500 million to companies that can create a crew launch vehicle capable of reaching and docking with the International Space Station. Winning companies will be announced this summer.

"A strong and vibrant commercial sector is essential to fulfilling the long-term aspirations of the vision [for space exploration announced by President Bush]," Shana Dale, NASA deputy administrator, said in remarks to a conference of space-industry professionals in May.

Thomas Jones, former shuttle astronaut and current adviser for Space Adventures, sees commercialization as a way to re-energize exploration and renew the public's interest in space.

"People have gotten blasé about the potential of space travel and what it can do for our society," Jones said. "Commercial services will allow NASA to get out of the mundane and get on to the exciting."

"Let [companies] be innovative and let them develop safe ships in a way that the government brains . . . have not explored," Jones said.

One finalist in the NASA competition is Reston-based Transformational Space Corp., known as t/Space. The company is developing a manned capsule intended to carry three crew members into orbit and dock with the space station.

In a quest to maximize safety and minimize costs, t/Space's design is a simple cone-shaped, reusable vessel that will be carried to about 25,000 feet by an airplane, said t/Space President David Gump. When released, the capsule will fire its own rockets to reach orbit.

Gump sees his enterprise as an early step in a field with enormous potential even beyond tourism, including industrial and medical research. "Once we can bring down the cost of putting people into space, then lots of things . . . will finally become possible," he said.

Money matters

Cost is a sizable concern: Today's astronomical trips have astronomical price tags.

A 10-day trip to the space station aboard a Russian rocket costs \$20 million. An optional spacewalk package, just announced by Space Adventures, will set you back an extra \$15 million.

Even short suborbital trips, which reach about 60 miles above Earth's surface and allow passengers to experience several minutes of weightlessness, cost \$100,000 to \$200,000.

For now, that means only a select few can book passage.

In 2002, aerospace consultant and former NASA administrator Lori Garver reserved a seat aboard Soyuz through Space Adventures.

"I really thought I could have symbolized the average person going to space," especially for women, Garver said.

Highlights of human spaceflight



THE ASSOCIATED PRESS

Discovery's launch in July 2005.

- **1958:** NASA founded
- **1962:** John Glenn becomes first American to orbit Earth
- **1969:** Neil Armstrong and Buzz Aldrin land on the moon
- **1981:** First space-shuttle launch
- **2000:** First crew inhabits the International Space Station
- **2001:** Dennis Tito becomes the first paying space visitor
- **2004:** First private manned spaceflight on SpaceShipOne

Partway through her training, some of her corporate sponsorships fell through and she had to withdraw from the flight.

Space entrepreneurs acknowledge that the cost is prohibitive for most, but they don't see that as an immediate problem for expansion of the industry.

"The wealthy are looking for new ways to spend their money," said Space Adventures' Anderson. "There's only so many cars and homes and boats and other things that you can buy. Experiences are extremely popular."

He and other advocates compare the young spaceflight industry to early days of computers, airline travel and cell phones in terms of cost and accessibility.

"The first computers were built in the 1940s, and it took until the 1980s until there was the personal computer," Anderson said.

"Space travel will one day be accessible to many others, but it could take decades," he said. "That's OK. You have to start somewhere."

The industry's proponents say development of new technology will help reduce costs — to some degree.

"I think over time, the costs will come down," said Kathy Thornton, a veteran of four shuttle missions, associate dean at the U.Va. engineering school and astronaut adviser for Space Adventures. "But it won't ever be driving to the beach."

Gump of t/Space agrees space travel will gradually become more accessible. "Flights to orbit will probably be, in current year dollars, at \$50,000 or less at some point in the 21st century," he said. "But I can't guess when that would be. I'm focusing on first getting it to \$5 [million]. That'll be challenge enough."

Regulations and risks

A burgeoning space industry raises questions about safety and regulation.

An officer of the Federal Aviation Administration responsible for overseeing commercial space transportation is in the process of developing the first set of federal standards for manned spaceflight, including crew and participant qualifications and training.

While all agree that safety is a primary goal, several space-tourism advocates worry that too much regulation would be detrimental.

"I think there should be very limited government oversight," said former astronaut Jones. "Lay on airliner-type safety requirements, that'll kill the industry."

Gump said it's too early to impose meaningful regulations. "It will take some time . . . to understand what the standards ought to be," he said. "We're feeling our way."

Jones likened recreational spaceflight to other extreme ventures. "It's just another high-adventure type experience. . . . The early commercial ventures will be a little risky but not incredibly risky compared to some of the other things people do," like climbing Mount Everest.

It boils down to an individual decision, said former astronaut Thornton. "There's always a risk to it. It's not like climbing on an airliner, so you have to understand that and be willing to accept that risk, whether you do it as a professional astronaut or you do it as a space tourist."

• Contact staff writer Jill Sakai at jsakai@timesdispatch.com or (804) 649-6860.

Try this

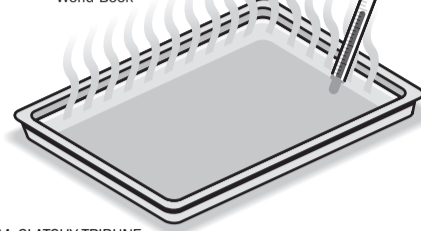
Escaping heat

Heat always moves from a warm place to a cooler place, and here is an example of how that happens:

You'll need:

- Thermometer
- Large cooking pot
- Very small cooking pot
- Shallow baking pan
- Adult helper

Source: World Book



HELEN LEE MCCOMAS, PAUL TRAP/McCLATCHY-TRIBUNE

The Children's Museum of Richmond performs these experiments every Sunday at 3 p.m. Schedule subject to change. Call 804-474-CMoR (2667) or visit www.c-mor.org for details.

What happened?

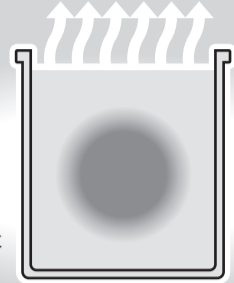
Water in the pan cools fastest, then the water in the small pot. Water in the large pot stays hot the longest.



That is because the pan has the largest surface area for the amount of water it contains.

The large pot has the smallest.

Heat escapes into the air. Heat escapes through the pan. Heat in the center of the pot cannot escape.



PLUGGED IN

Google Spreadsheets may challenge Office

You can't swing a pocket protector without hitting a tech-business pundit who is absolutely convinced that Google intends to take on Microsoft in the office-suite market.

Many take the recent release of



DOUG STANLEY

Google Spreadsheets as further proof Google is targeting Office, which generated \$2.95 billion in sales and \$2.09 billion in profit in Microsoft's third quarter that ended March 31.

Unless you own Google or Microsoft stock, Google's intentions don't mean much either way. But if you're a small-business owner or home user, Google Spreadsheets might be just what you're looking for.

Google says the online program's main goal is to make it eas-

ier for family, friends or co-workers to access and edit the same spreadsheet from different computers at different times.

Simply put, it makes sharing and collaboration easier by not forcing users to e-mail attachments back and forth.

Google Spreadsheets is in a "limited test" phase. Would-be users can request access on a first-come, first-served basis at spreadsheets.google.com.

Although not as full-featured as Microsoft's Excel spreadsheet application, Google Spreadsheets is pretty good. The interface is clean and easy to use, and you can start from scratch or import your existing spreadsheets.

Google certainly isn't the first to offer online spreadsheet applications, but it is the biggest name to enter that market.

Among existing online productivity tools are irows.com, a very useful spreadsheet application, and ThinkFree Office Online, onli-

ne.thinkfree.com, a suite of office applications that run in most current Web browsers.

The downside of online spreadsheets, word processors and other tools is you have to be online to use them. That's not much of a problem if you have an always-on broadband connection, but it's troublesome if you don't — and a downright deal breaker if you frequently fly for business and work on spreadsheets in the air.



All things iPod: From iLounge.com, the excellent Web site for iPod enthusiasts, comes "The Free iPod Book 2.0."

iLounge touts the e-book as the place to go for every major iPod and iTunes question, as well as ratings of more than 900 accessories and iPod models. You'll also find 20 exclusive sneak peeks at new iPod accessories.



Just the fax: Faxes seem primitive compared with e-mail, but some still prefer paper over pixels.

If you don't have a fax machine but need to exchange documents with someone who prefers a fax,

there are ways to get the job done with your PC. Most desktop computers come with built-in fax modems, a fact often forgotten as more and more people connect to the Internet via cable, DSL or other broadband connection.

Windows XP includes a fax service, although it's not part of a default installation. You'll need to install and configure it and connect your fax modem to a telephone line before your computer will double as a fax machine.

To install the fax component, Open Control Panel and click Add or Remove Programs. Click Add/Remove Windows Components. Select the Fax Services check box, and then click Next. Insert your Windows XP CD if prompted. The wizard will walk you through the rest.

Once the fax service is installed, you will need to configure it. For instructions, go to support.microsoft.com/?kbid=306550.

If that seems too much for you or if you don't have an available phone line, you can choose from an array of online fax providers, including eFax.com and www.faxaway.com/.

• Doug Stanley is a staff writer for The Tampa Tribune in Florida.

HEALTH NOTES

Autism meeting

The Autism Society of America, central Virginia chapter support group will meet Friday from 7 to 9 p.m. at River Road United Methodist Church, 8800 River Road. For details, call (804) 257-0192 or visit www.asacv.org.

Learning disabilities

A support group for adults who have or think they might have a learning disability or attention-deficit disorder is held from 7 to 8:15 p.m. the second and fourth Mondays at Weinstein JCC, 5403 Monument Ave. For details, call Sheila Price at (804) 337-3747.

Healing Touch

A Healing Touch clinic is offered the first and third Wednesday evenings of each month at Massey Cancer Center at Stony Point, 9000 Stony Point Parkway.

Healing Touch is a noninvasive, energy-based therapy that can promote relaxation and provide pain management through chronic and acute conditions, including cancer. The clinic is free for up to three sessions.

A Healing Touch introductory workshop will be held Tuesday from 7 to 9:30 p.m. at Henrico Doctors' Hospital (Forest).

The workshop will offer basic concepts for pain relief and stress reduction. The cost is \$25 per person or \$40 for two.

For details on the workshop or the clinic, call Deny at (804) 262-6721 or e-mail: deny@denyenergy.com.

Breast cancer

Radiation oncologists Dr. Doug Arthur and Dr. Laurie Cuttino will discuss "Mammosite: A 5-Day Treatment for Breast Cancer," Wednesday at 6 p.m. at Henrico Doctors' Hospital (Forest).

To register, call (804) 327-8708 or visit www.henricodoctors.com.

Ice-cream social

The Hanover MS Support

Group invites individuals with MS, their families, friends and caregivers to a free ice cream/dessert social Sunday from 1 to 3 p.m. at Church of the Redeemer, 8275 Meadowbridge Road.

Susan Greenbaum and band will provide entertainment. The event is free and child care will be available.

For details, call Jarrod Butcher at (804) 353-5008, ext. 10, or jarrod.butcher@var.nmss.org.

Better Breathers Club

The Richmond Better Breathers Club, a support group for people with lung disease, will meet next Thursday at 1 p.m. at the American Lung Association, 9221 Forest Hill Ave.

Attendees are asked to bring a dish for the group's annual indoor potluck picnic. Drinks will be provided.

For details, call (804) 327-0388 or (804) 378-0628.

Memory workshop

"Forgetfulness: When is it a Problem?" will be the topic of a free workshop offered by A Grace Place Adult Care Center and the

Greater Richmond Chapter of the Alzheimer's Association next Thursday from 2:30 to 4 p.m. at 8030 Staples Mill Road.

For details, call Kelly at (804) 261-0205, ext. 145.

Let's Talk Cancer

Let's Talk Cancer support group meets the first and third Wednesdays at 1:30 p.m. at the Massey Cancer Center, Conference Room 122, 401 College St.

The group is sponsored by VCU's Massey Cancer Center.

For details, call Debbie Cadet at (804) 828-2511.

Mental-wellness group

The Mental Wellness Support Group will meet next Thursday at 5:30 p.m. at Christ Ascension Episcopal Church, 1704 W. Laburnum Ave.

For details, call (804) 784-5181.

• Items for Health Notes should be sent at least one week before publication. They can be sent to Pauline Clay, Richmond Times-Dispatch, P.O. Box 85333, Richmond, VA 23293 or e-mailed to tdhealthnotes@timesdispatch.com.

PHARMACY - joe graedon and dr. teresa graedon

Eating Vicks VapoRub could harm a fetus

Q My daughter's friend is pregnant and eats Vicks VapoRub. I read in one of your articles about people eating something that's not food. Is it caused by some sort of vitamin deficiency?

A. Vicks VapoRub may have many uses, but it should not be eaten! This familiar salve contains camphor, which can be toxic when ingested. Even if it didn't harm the woman herself, there is the baby to consider.

People sometimes feel compelled to eat strange things if they are deficient in minerals, particularly iron or zinc. Your daughter's friend should be tested to see if she is missing one of these essen-

tial minerals. Correcting the deficiency should ease her craving for Vicks.

Q. Why do blood pressure readings vary so much? Mine was 124/72 in the morning and went to 144/85 in the afternoon. I don't take blood pressure pills, just over-the-counter allergy medicine.

A. Blood pressure varies throughout the day, but decongestants in allergy pills might raise it.

• Joe Graedon is a pharmacologist. Dr. Teresa Graedon is a medical anthropologist and nutrition expert. E-mail them via their Web site: www.peoplespharmacy.com. © King Features

Sunday in Parade

■ **How to stay healthy at college:** Two million freshmen heading off to college this fall will face many challenges to stay healthy. Find out how to cut the risks for depression, sexually transmitted diseases and infection.

■ **Up close:** Rachel Blanchard plays a lead role in "Snakes on a Plane," starring Samuel L.Jackson. The actress talks about what it was like getting acquainted with hundreds of snakes.

The Good Doctors
www.HenricoDoctors.com

Forest Campus • Parham Campus
HCA Virginia

Henrico Doctors' Hospital is pleased to welcome Zachary M. Shook, M.D. to our medical staff

Dr. Shook obtained his medical degree from the University of Miami, School of Medicine and completed his residency in internal medicine at Virginia Commonwealth University/ Medical College of Virginia.

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Parham Primary Care
7702 Parham Road, MOB III, Suite 205
Richmond, VA 23294
(804) 346-1515

health, science, technology
EXPLORE

E

Editor: Pauline Clay
(804) 649-6632
pclay@timesdispatch.com

Health
notes • E3

Richmond Times-Dispatch THURSDAY, AUGUST 17, 2006

/www.TimesDispatch.com/

PLUGGED IN

Remotely backing up is a breeze

Most of us treat our computers as if they were as invulnerable as a vegetable platter in a roomful of toddlers.

We feed our photos, home movies, music, résumés, business records and financial information into them without giving much thought to the possibility it all could vanish.



DOUG STANLEY

Most people don't create proper backups of critical files because it's just too much trouble. What's more, the minority who do back up files may be only a little better off than those who make no backups at all.

If fire destroys your home or business, for example, how useful are the backups you put on the shelf or on an external or network drive?

If a burglar steals your computer, chances are that external drive is going with it. So what's the answer? Automated backups to a remote location are an easy set-it-and-forget-it option.

Let's look at two remote backup solutions promising peace of mind to home users and small businesses.



Mozy: First up is Mozy (<http://mozy.com>), a Utah-based startup that offers 2 gigabytes of free storage space. The catch — and it's a small one for getting that much secure storage for nothing — is you'll receive an e-mail once a week containing advertising.

Two gigabytes is enough space to store about 500 songs, 500 to 1,500 photos or 150 hefty spreadsheets. Need more space? Mozy will provide it for a fraction of the cost of many of its competitors. For \$2 a month, you get 5GB; for \$5, 30GB; and for \$10, 60GB.

To ensure the privacy of your data, Mozy encrypts your files before they leave your computer. The files are then transferred to Mozy's servers using 128-bit Secure Socket Layer encryption, the same technology used by online banks.

To use the service, you simply download and install Mozy's software. It will make suggestions about what you should back up. Next, you tell Mozy when to do its work. You can choose automatic backups, which occur when your computer is idle, or you can opt to schedule backups in the middle of the night so you'll be sure Mozy doesn't get in your way.

From there, you can pretty much forget about Mozy until you need it to restore one, some or all of your files.



Carbonite: Next up is Carbonite (<http://carbonite.com>). For a mere \$50 a year, it will back up just about everything on your hard drive regardless of how much storage space is used. The Boston-based company, also a startup, offers a 15-day free trial so you don't have to commit a dime unless you like the service.

To use Carbonite, you download and install the associated software and select what files to back up. That done, you reboot the computer, and Carbonite backs up your files in the background when your computer is idle. Carbonite, like Mozy, uses double encryption to safeguard your files.

After losing data to a hardware failure or your own error (who hasn't accidentally deleted a file?), you can choose to restore a file, a folder or everything you've backed up.

Carbonite won't back up system files or programs, and it also won't back up individual files that are larger than 2GB — something to be aware of if you have large digital video files.

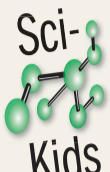
Whether you use Carbonite, Mozy or something else, a backup routine is critical. Do something — anything — rather than risk losing your important documents, cherished photos and purchased music.

• Doug Stanley is a staff writer for The Tampa Tribune in Florida.



Jane Brody

Casting new light on migraine headaches **E3**



Sci-Kids

Vitamin C is required for good health **E3**

Try this

Make a thin film of soapy water and convert it into a bubble **E3**

Drink up!

Staying cool

Heat-related illness is responsible for hundreds of deaths annually in the United States. From 1999-2003, a total of 3,442 deaths were blamed on exposure to extreme heat, according to data from the Centers for Disease Control and Prevention.

There is no shortage of information on athletes, hydration and practicing or playing in the heat. The American College of Sports Medicine (www.acsm.org), the National Federation of State High School Associations (www.nfhs.org), the National Athletic Trainers' Association (www.nata.org), the Virginia High School League (www.vhsl.org) — they all have statements and/or guidelines.

In addition, local sports medicine experts offered these suggestions:

- Fluid-replacement beverages should be in individual containers that are easily accessible. Avoid beverages with caffeine or those that are more than 8 percent carbohydrates.
- Players should drink before, during and after practice.
- Be alert to signs of heat illness, including nausea, muscle cramps, upset stomach, heavy sweating or cessation of sweating, mental confusion such as being unable to follow drills, personality changes or bizarre behavior, shallow breathing, rapid pulse or elevated temperature.
- Create a buddy system where players are paired and asked to be alert to changes in each other that might indicate heat illness.
- Monitor your urine. If it's deep yellow, you're probably dehydrated. It should be light yellow or clear.
- Have some type of cooling system available, at a minimum quantities of ice that can be used to cool a player. Ice packed under the armpits and on the groin can speed up cooling, but be careful not to cool down too quickly.
- Medications, bouts of fever and illness that deplete fluids, such as diarrhea and vomiting, can affect hydration. Coaches should be informed when a player has been ill.



DON LONG/TIMES-DISPATCH

Dr. Katherine Dec, medical director for women's sports medicine at CJW Medical Center, checks Cosby High School player Joshua Wilburn during practice to make sure he drinks enough water.

Young athletes beat heat, tough workouts by staying hydrated

BY TAMMIE SMITH
TIMES-DISPATCH STAFF WRITER

High school football coach Greg DeFrancesco tells his players to show up for practice a little sloshy.

He wants them to feel the water in their bellies — that way DeFrancesco knows they drank the 24 ounces of water he tells them to consume in the mornings before practice.

Convincing the players they need to stay properly hydrated, particularly during practice on hot days, and telling them what they need to do is not all that complicated, said DeFrancesco, head football coach at James River High School in Chesterfield County.

He believes the players are getting it. Just in case they don't, anyone whose weight drops too much between the start and end of morning practice will sit out the afternoon practice if they don't rehydrate sufficiently during the two-hour break.

"You expect them to lose 2 percent of their body weight," DeFrancesco said. "If they lose more than 2 percent, they can't go back unless they rehydrate."

The concern is warranted. Here and across the nation, the deaths of high school and college football players during or after practice in hot weather has raised concerns that some still don't understand that dehydration can lead to potentially fatal heatstroke. Not all the deaths have been confirmed as the result of heat illness, but signs point to heat as at least a contributing factor.

A 16-year-old Stafford County High School student, Joey Robertson, died Aug. 11, three days after collapsing during the team's second practice. Heatstroke was determined as the cause of death, according to his family.

"There is such heightened awareness of this; I don't think people are missing the boat," said Dr. Doug Cutter, director of the

SEE DRINK UP, PAGE B3 ▶

Migration: It's more than a wing and a prayer



Savannah sparrows navigate using sunlight patterns at dawn and dusk.

SCIENCE MAGAZINE

Tech research finds that sparrows depend on polarized sunlight cues

BY JILL SAKAI
TIMES-DISPATCH STAFF WRITER

Since long before the advent of GPS or atlases, birds have used natural landmarks and internal compasses to navigate during migration.

New research shows that small songbirds called Savannah sparrows stay on course by using sunlight patterns at dawn and dusk. The study was published last week in *Science*.

From research during the past few decades, scientists knew that birds and animals navigate using internal compasses based on sun position, star patterns, magnetic fields deep in the Earth, and polarized sunlight, which they see as characteristic patterns in the sky based on where the sun is.

Though birds can calculate directions from four sources, they can only use one source at a time.

Now, Virginia Tech biologist John Phillips and his colleagues have found that sparrows rely on polarized sunlight cues visible at the horizon at sunrise and sunset to reconcile the different compasses.

"The problem arises when you have all these alternative compasses and you've got to switch back and forth depending on whether it's day or night or the sky is cloudy," Phillips said.

"You have to calibrate all the systems so that when you switch from the magnetic compass to the star compass you don't go off in some wildly different direction."

To reconcile the differences, Rachel Muheim, a researcher from Phillips' lab, studied wild Savannah sparrows as they prepared to head south from Alaska last fall. She focused on the importance of the sun when it was at the horizon.

In the wild, Phillips said, the "birds go up to the tops of trees. . . . They stop poking at each other and look intently at the sky during sunset or sunrise."

SEE SPARROW, PAGE E3 ▶

WALTER WITSCHY • special correspondent

Drink your juice: Vitamin C is required for good health

In the 1500s and 1600s, sailors on long voyages suffered from scurvy — always dangerous and sometimes fatal. They bled and bruised easily. Their hair and teeth fell out. Their swollen joints were very painful.

By the 18th century, it was clear that the sailors' diet lacked a critical element. Sailors believed eating sour things prevented scurvy. British doctor James Lind did a science experiment to learn the truth.

Lind tried different treatments on 12 sailors with scurvy — adding things such as vinegar, sulfu-

ric acid, drugs or cider to their diet. Sailors who got two oranges and a lemon each day recovered quickly. (The other treatments did not work.)

Lind learned to preserve concentrated fruit juice for easy storage on shipboard. Scurvy disappeared as a sailors' problem. By 1795, a daily ration of lemon or lime juice was part of the standing orders of

the British Navy — and their sailors came to be called "limeys."

In the past century, scientists learned most animals do not get scurvy, even when they eat no vitamin C. They make all the vitamin C they need within their bodies. Humans (and our primate cousins) have a genetic defect that prevents us from making vitamin C. We must eat fruits and vegetables that contain it.

Oranges and grapefruit, and their juices, are good sources of vitamin C. So are strawberries, broccoli and red peppers. A half-cup serving contains about 50 milligrams of vitamin C.

Dr. Linus Pauling, who won two Nobel Prizes, claimed that large daily doses (1,000 to 4,000 milligrams) of vitamin C were helpful in treating cancer and cardiovascular disease. He noted that

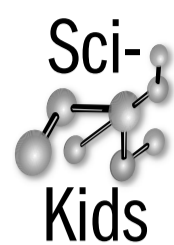
vitamin C is required to make collagen (for joints and blood vessels) and to manufacture a critical nerve and brain chemical.

Many labeled his views quack science, but recent studies may prove him correct. Now the National Institutes of Health recommends a daily diet of 75 to 90 milligrams of vitamin C for healthy adults. Some studies show that 400 milligrams per day is even more beneficial.

After 500 years of study, we still have more to learn about this critical vitamin.

In Virginia's science Standards of Learning, life processes such as these are covered in kindergarten through sixth grade, and in the Life Sciences standards.

• Walter Witschey is director of the Science Museum of Virginia.



shipboard. Scurvy disappeared as a sailors' problem. By 1795, a daily ration of lemon or lime juice was part of the standing orders of

Try this

A flying film

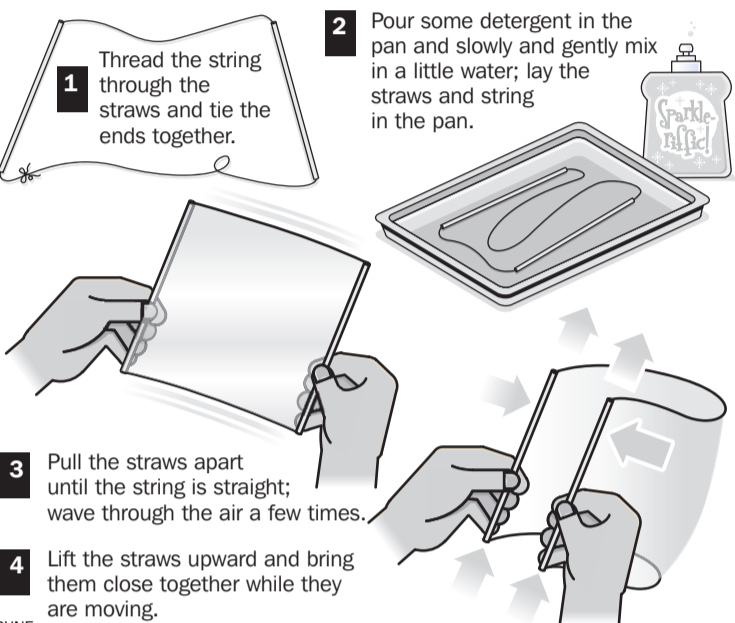
How to make a thin "film" of soapy water and then put air inside it to make a large bubble.

You'll need:

- Two plastic straws
- Liquid dishwashing detergent
- Water
- 3-foot string
- Large baking sheet with sides

SOURCE: Simple Science Experiments with Everyday Materials

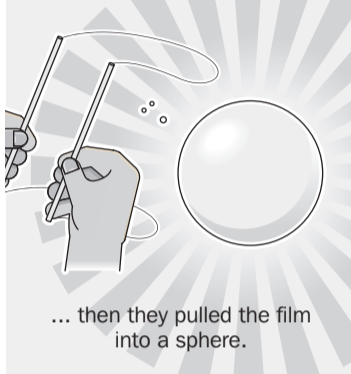
HELEN LEE MCCOMAS, PAUL TRAP/McCLATCHY-TRIBUNE



What happened?

First you made a "film" (thin layer) of soapy water. Then you pushed air into the film, which closed around the air and made a bubble.

Detergent and water molecules pull toward each other, so first they stretched the film flat ...



The Children's Museum of Richmond performs these experiments every Sunday at 3 p.m. Schedule subject to change. Call 804-474-CMOR (2667) or visit www.c-mor.org for details.

HEALTH NOTES

Brain-injury group

The Brain Injury Association of Virginia/Richmond Chapter will meet Monday at Children's Hospital, 2924 Brook Road.

Networking will begin at 6:15 p.m. in the auditorium, and the meeting will start at 6:30.

For details, call Christine Bagini at (804) 355-5748.

Ovarian cancer

The Greater Richmond Area

Division of the National Ovarian Cancer Coalition will meet Monday at 6 p.m. at Henrico Doctors' Hospital (Forest).

For details, call Susan Guckenberg at (804) 200-7033.

Health fair

Cross Over Ministry, Bon Secours Care-A-Van and the Peter B. Ramsey Dental Society are holding a Back-to-School Community Health Fair tomorrow at Cross-Over Health Center, 108 Cowardin Ave.

The health fair will offer school physicals, immunizations, dental

and vision screenings for children ages 5-17. Bring shot records and school physical forms. Registration will begin at 7:30 a.m.

For details, call Mary Moore at (804) 262-3585, ext. 109 or mmoore@crossoverministry.org.

MS self-help group

The Hanover MS Self-Help Group, part of the National Multiple Sclerosis Society, will meet next Thursday from 7 to 8:30 p.m. at Commonwealth Wholesale, 10085 Ledbetter Place.

For details, call Dana at (804) 550-2280 or (800) Fight-MS.

Ehlers Danlos meeting

The Richmond/Central Virginia Ehlers Danlos Chapter will meet Sunday from 2 to 4 p.m. at St. Mary's Hospital in Education Room 163.

For details, call Diana Harris at (804) 272-6701 or dianaharris1@comcast.net.

• Items for Health Notes should be sent at least one week before publication. They can be sent to Pauline Clay, Richmond Times-Dispatch, P.O. Box 85333, Richmond, VA 23293 or e-mailed to tdhealthnotes@timesdispatch.com.

YOUR PERSONAL HEALTH

Casting new light on migraine headaches

Everything you thought you knew about migraine headaches might be wrong. At least that's what headache researchers now maintain.

From long-maligned dietary triggers to the underlying cause of the headaches themselves, long-standing beliefs have been brought into question by recent studies.

As if that were not enough dogma to overturn, there is growing evidence that almost all so-called sinus headaches are really migraines.

While these findings might not be an obvious cause for joy among the afflicted, the good news is that there are now many drugs that can prevent migraine attacks in the frequently afflicted or abort the headaches once they start.

The World Health Organization ranks migraines among the most disabling ills. About 28 million Americans suffer from severe migraines that leave them temporarily unable to function at work, at home or at play. Many more millions have them in milder forms. All told, they cost employers about \$13 billion a year in lost productivity, with another \$1 billion spent on medical care.

The throbbing pain of a migraine is often accompanied by nausea, vomiting and extreme sensitivity to light and sound. A person feels sick all over.

Symptoms may include nasal stuffiness, blurry vision, diarrhea, abdominal cramps, abnormal sensations of heat or cold, anxiety, depression, irritability and inability to concentrate.

About 4 percent of prepubescent children have migraines. After puberty, the incidence rises to 6 percent among men and 18 percent among women and gradually declines after age 40.

The higher rate among women is linked to fluctuations in blood levels of estrogen; the drop in estrogen just prior to menstruation sets off menstrual migraines, which tend to be more severe and last longer than other forms.

In some, the headache is preceded by an aura of visual, sensory or motor symptoms. They include seeing flashing lights or specks, numbness in the hand, dizziness and an inability to speak.

Though hard to mistake in their classic form, migraines can be — and apparently often are — misclassified as sinus or tension headaches, probably because they can cause nasal congestion, pressure or pain in the forehead or below the eyes, and discomfort on both sides of the face.

Migraine sufferers have long been cautioned to avoid certain foods believed to bring on attacks, especially chocolate, alcohol (red wine in particular) and aged cheese. But the evidence supporting this notion is meager. More common causes include stress (positive or negative), weather changes, estrogen withdrawal, fatigue and sleep disturbances as well as overuse of over-the-counter pain medications.

about the entire day with barely any odor.

A. Thanks for sharing this unique solution to a common problem. Listerine contains thymol, eucalyptol, menthol and methyl salicylate. These herbal oils have antifungal and antibacterial properties. Although it is not approved for this use, we're glad to learn it works.

Q. I used to get canker sores in my mouth when I was younger. My mother told me to hold a slice of banana tight against the sore with my tongue, and it works.

You have to hold it there until it stings, about four or five minutes. Riper bananas seem to work better. Seldom have I had a sore that lasted longer than a day, and it certainly tastes better than medicine.

A. A slice of banana certainly sounds like a pleasant treatment for canker sores. We don't know how it would work, though.

• Joe Graedon is a pharmacologist. Dr. Teresa Graedon is a medical anthropologist and nutrition expert. E-mail them via their Web site: www.peoplespharmacy.com. © King Features

PHARMACY • joe graedon and dr. teresa graedon

Mouthwash appears to halt girl's underarm odor

My daughter is entering puberty and dealing with the usual underarm body odors. We tried many different deodorants and antiperspirants, to no avail.

I figured if Listerine killed the germs that cause bad breath, it

might kill the bacteria that cause underarm odor. I checked with the pediatrician first to make sure it would be safe.

Sure enough, Listerine works. She applies it after showering, lets it dry and then applies an antiperspirant. She can go just

"They'll sit all night and hop in the direction that they would have migrated," Phillips said.

Sparrows in cages without a view of the horizon hopped toward the south side of their cage, following the direction of magnetic fields. Birds able to see the horizon at sunrise and sunset instead hopped in the direction that looked like south according to polarized sunlight cues that Muheim gave them.

"It's really the region near the horizon that's

the fundamental reference system," Phillips said. "It seems important to put all these systems in register."

He believes the sparrows use light polarization patterns from sunrise and sunset as their primary cue to figure out north and south and then recalibrate their other compasses accordingly.

The next challenge, Phillips said, is to figure out what parts of the brain are involved.

Drink up

— FROM PAGE E1

Sports Medicine Center at CJW Medical Center (Chippenham) and a monthly columnist for The Times-Dispatch.

"I think sometimes you have some individuals who are more prone to heat injury," Cutter said. "It's hard to screen for these people. There is nothing like a genetic marker to say this kid is really prone to having a heat injury so he cannot exercise at certain times of the day."

There is classic heatstroke brought on by prolonged exposure to extreme heat. The elderly, people with chronic illnesses and young children are more susceptible. Exertional heatstroke, on the other hand, is brought on by exercise or hard physical activity during hot weather. Victims of exertional heat illness are often fit young men.

Cooking your systems

In both instances, the body's core temperature rises when the body is unable to cool itself. Usually, when we get hot, our body responds by sweating. As that sweat evaporates, we cool off. A number of things can interfere with cooling. On a hot, humid day, for instance, less sweat is evaporated, so cooling is impaired.

"For heatstroke . . . the metabolic machinery has just gone crazy because of the temperature," said Dr. Kevin R. Ward, an associate professor of emergency medicine, physiology and biochemistry at Virginia Commonwealth University.

"You literally, for lack of a better term, start cooking yourself," Ward said. "You retain heat. Some organ systems are more sensitive than others. Your skeletal muscles would not be as sensitive as your brain. When your brain really becomes affected — we see this when patients start getting confused — this starts off a deadly series of events. If you cannot get your temperature under control or hydrate completely, there may be permanent neurological damage or death."

By the time signs of heatstroke — such as seizures and changed mental status — are evident, the damage is being done, Ward said. Researchers are looking for physical clues that would give earlier indications that someone is getting in trouble. Ward's research includes projects undertaken as part of the VCU Reanimation Engineering Shock Center, where he is associate director. The center's emphasis is on shock, or multisystem organ failure. Much of the research focuses on the medical care of combat casualties.

One project Ward and collaborators are working on is a 4- to 5-inch-long, strap-on device that monitors heart rate, temperature, how well skin conducts electricity (a factor affected by hydration or sweat) and other physical variables.

"You get a lot of information about the body's metabolism," Ward said. "We would know if you are hemorrhaging or are being overheated dangerously, like in heatstroke."

Such a device has applications on the battlefield and off.

"Something like this could also be used for first responders," Ward said. "Firefighters. If you can imagine fighting a fire having all that gear on, you have no way to lose heat. The devices would have the ability to send out a signal." Such signals, he said, would provide clues when a firefighter, for instance, is becoming dangerously hot and needs to be pulled out.

Researchers are also trying to better understand biological factors that allow some athletes, such as marathon runners, to withstand higher core body temperatures. Some have been measured with core temperatures of 106 or 107 degrees with no ill effects. In one study reported in the journal *Medicine & Science in Sports & Exercise* in May, researchers had 18 soldiers swallow sensors and wear data recorders that tracked their temperatures and heart rates during a 21-kilometer race on a warm, humid day. One runner whose core temperature reached 107.6 degrees Fahrenheit crossed the finish line without any problems.

Some say it's all about acclimation. Over time, with practice, athletes condition their bodies to tolerate higher temperatures.

"An athlete needs to be ready to exercise in the heat," said Dr. Katherine Dec, medical director for women's sports medicine at CJW Medical Center. "Acclimation . . . can take some time. We set up practices at certain times of the day that will not be high-heat times."

Lifestyle choices

Dec also counsels players about what they drink and eat and about their lifestyle. Eat a balanced diet. Get enough sleep. She recommends sports drinks with no more than 8 percent carbohydrates and staying away from caffeinated drinks. Caffeine increases the body's metabolism and promotes dehydration. "The other thing I find in our clinic is a lot of the kids that drink a lot of caffeinated beverages are not thirsty for water," Dec said. "So it's hard for them to drink enough water to keep up their hydration status."

She said female athletes suffer with heat illnesses, though you rarely hear about such cases. One reason football players seem to get in trouble more than other athletes is probably because of the heavy gear, she said. "Field hockey has lighter gear. Volleyball is indoors. The NFL, college and high school see a lot more problems because of the heavy equipment and heat exposure."

DeFrancesco says you can't emphasize hydration enough. A session with players' parents included 30 minutes on the topic.

The athletes are reminded — with words and pictures. Posters at the field house where the players get ready show different shades of urine. It might be a little crude, DeFrancesco said, but they get it. A deep yellow color is not good.

"It should be clear," he said. "It's a constant reminder."

• Contact staff writer Tammie Smith at tlsmith@timesdispatch.com or (804) 649-6572.

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