

## New resolution lays groundwork for war

### ANALYSIS

### "It's the endgame now" on diplomatic road to war

By PHILIP DINE  
Post-Dispatch Washington Bureau

WASHINGTON — The decision by the United States and Britain on Monday to offer a second resolution on Iraq sets in motion the last stage in a move toward war by mid-March, military analysts say.

President George W. Bush is acceding to a request by his top ally, British Prime Minister Tony Blair, that before leading a strike against Iraq, the two nations must give the United Nations one more chance to give its approval.

"This is the final act," said Danielle Fleck, who runs the defense and foreign policy section at the American Enterprise Institute. "We knew the Bush administration was going to take a final resolution. This will mark

the last effort to make the United Nations put its money where its mouth is."

Lawrence Korb, vice president of the Council on Foreign Relations, said the White House, which was also joined by Spain on Monday, is seeking the maximum "legitimacy" before going to war.

"It's the endgame now. You want to get as much support as you can before you start this war," said Korb, who was assistant secretary of defense under President Ronald Reagan.

Jim Walsh, who directs Harvard University's program on nuclear security and military proliferation, said, "My presumption is that the resolution is one (Bush) thinks will shorten rather than lengthen the time required for him to take action against Iraq."

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### U.S., BRITAIN AND SPAIN:

## Would give Iraq "two weeks or so" to disarm

### FRANCE, RUSSIA AND GERMANY:

## Propose inspections through at least July 1

By COLM LYNCH  
Washington Post

UNITED NATIONS — The United States, Britain and Spain introduced a new draft Security Council resolution Monday declaring that Iraq has squandered its "final opportunity" to voluntarily disarm and laying the political and legal groundwork for a U.S.-led military invasion.

Its introduction marked the beginning of what U.S. and British officials characterized as the final push to win council backing for a decision to go to war.

The resolution recalls that the 15-nation council warned Iraq in November that it would face "serious consequences" if it did not scrap its banned weapons programs.



THE ASSOCIATED PRESS

French President Jacques Chirac and German Chancellor Gerhard Schröder, who have been leading the opposition, responded with a diplomatic counteroffensive. Meeting in Berlin, they announced a new proposal that would ensure the continuation of U.N. weapons inspections in Iraq at

### TODAY

- Bush meets with the prime minister of Bulgaria—a Security Council member that supports the U.S. position.
- The Turkish Parliament is expected to debate accepting U.S. troops. The Turkish Cabinet agreed to do so on Monday. Story on A6

Black Hawk helicopter crashes in Kuwait: All four crew members aboard were killed, Army officials said. A6

least through the middle of the summer. Russian President Vladimir Putin endorsed the proposal.

See Iraq, A6

## More grounds flights for employees

### Transportation agency reacts to report that it spent \$250,000 last year

By BILL BELL JR.  
Post-Dispatch Jefferson City Bureau

JEFFERSON CITY — Flights on state-owned airplanes for Department of Transportation employees were grounded Monday until agency officials complete a review of the practice.

The action came in response to an article in Monday's Post-Dispatch, said Jeff Briggs, a department spokesman. The article detailed how the department spent more than \$250,000 on 229 flights last year, flying commissioners and employees in from other parts of the state.

Earlier this month, several commissioners asked the department's inspector general to review agency policies on airplane use.

But the article "elevated the profile of this issue and put me in a position where I had to take a more cautious approach," Briggs said.

It was not clear how long the policy review would take. In the interim, flights will be grounded "unless a critical need arises, such as emergency bridge inspections," the department said in a news release.

For the most part, the decision affects department leaders such as Director Henry Hungerbeeler, who flew 55 times last year at a cost of more than \$50,000. Most of the time, Hungerbeeler flew with other people.

See Travel, A8

## TAKING WINTER TO NEW HEIGHTS

SNOWFALL TOTALS: 4-5 inches fell on Sunday and Monday, 26.4 inches have fallen so far this winter (18.1 is average) | STORY ON B1



JERRY NAUNHEIM JR. / POST-DISPATCH

Justin Vaughn, 12, of Festus, gets some serious air under his board Monday as he snowboards over a bump on the grounds of Festus Elementary School. Schools throughout Jefferson County were closed Monday because of the snow. Morning traffic was tangled across the area—especially in west St. Louis County, where several snowplows failed.

## THE RIGHT SNUFF

### U of I researchers find that heavy metals, such as zinc and copper, aid olfactory receptors in detecting foul smells.

By TINA HESMAN  
Of the Post-Dispatch

Heavy metal smells.

While it may sound like music criticism, the conclusion is actually a new scientific model that may explain for the first time how humans and other mammals detect odors.

Scientists at the University

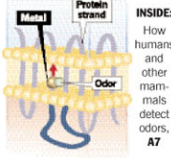
of Illinois have discovered that odor-sensing proteins, called olfactory receptors, may owe much of their stink-detecting capabilities to heavy metals such as zinc or copper.

The discovery is based on simple knowledge that inorganic chemists have had for a long time, but biologists have largely overlooked—that things that bind to metals smell strongly and badly.

"Inorganic chemistry stinks," said Kenneth S. Suslick, a chemist at the University of Illinois at Champaign-Urbana who led the work on smell.

The results of the study appear today in the Proceedings of the National Academies of Science.

The primary function of the olfactory system—the scientific name for the part of the body responsible for the sense of



INSIDE: How humans and other mammals detect odors. A7

smell — is to help mammals avoid spoiled food, Suslick said. Bacteria often give off malodorous chemicals that stick strongly to metals, he said.

See Smell, A7

## Lawmakers are united on nursing home bill

### Plan seeks to protect older adults, says bipartisan group of legislators

By VIRGINIA YOUNG  
Post-Dispatch Jefferson City Bureau

JEFFERSON CITY — In a breakthrough in the battle over nursing home reform, a bipartisan group of legislators united Monday behind a bill that they say would improve the protection of elderly residents.

The plan combines carrots and sticks — for example, good homes would be inspected less often but homes cited for life-threatening violations could face up to \$25,000 in daily fines.

Nursing homes also would be required to report all deaths to the county coroner or medical examiner before moving a body to a funeral home. Homes that refused to cooperate with inspectors would risk losing their licenses.

Details of the bill were hashed out in the last several weeks by staff members for Senate President Pro Tem Peter Kinder, R-Cape Girardeau, and Lt. Gov. Joe Maxwell, a Democrat and the state's official advocate for older adults.

"Today is a very good time for the elderly of Missouri," said Martha Hicks of Jefferson City, representing the Silver Haired Legislature, an advocacy group for older adults. "I don't believe I've ever seen a better example of consensus and compromise."

Hicks and other advocates flanked the bipartisan group of sponsors at a news conference Monday in the state Capitol.

The proposal follows a Post-Dispatch investigation that found that thousands of America's nursing home residents are dying from preventable

See Nursing homes, A8

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New leader of South Korea is inaugurated	F1
Roh Moo-hyun pledged to pursue warmer ties with North Korea despite the communist state's test firing hours earlier of an anti-ship missile.	A2
Earthquake kills hundreds in China	E1
Survivors dug through rubble after the quake toppled farmhouses and schools in the country's far west. At least 259 people were killed.	A2
Failure of HIV vaccine in trial dashes hopes	B1
But it appeared to work well in blacks. The results demonstrated just how far scientists are from bringing the disease under control.	A5

IN METRO	
Promoter sees room for a new SLU arena	B1
He said the university's plan to book at least 10 events a year isn't a threat to the Savvis Center downtown or the Family Arena in St. Charles.	B1
Mardi Gras parade takes a jog to the south	B1
Organizers shifted a portion of the March 4 route two blocks south because of construction along parts of Washington Avenue.	B1
School buses here fail safety inspections	B1
The Missouri Highway Patrol tested 248 Atlantic Express buses, used to shuttle city and county students. Of those, 174 did not pass.	B1

IN BUSINESS	
Natural gas prices, futures rise sharply	C1
DOW Fears swirl that bitterly cold weather will raise demand for energy and bite into already low natural gas inventories nationwide.	C1
CLOSE 7,858.24	
DOWN 159.87	
LOSS 2%	

IN SPORTS	
MU football player faces felony weapons charge	D1
University of Missouri football player Nick Tarpoff has admitted that he made up a story about a robber breaking into his home after accidentally shooting himself in the arm.	D1
Today Frigid morning. High 23.	
Wednesday Chance of snow. Low 15. High 29.	
Details, B5B	

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# THE RIGHT SNUFF

*U of I researchers find that heavy metals, such as zinc and copper, aid olfactory receptors in detecting foul smells.*

By TINA HESMAN  
Of the Post-Dispatch

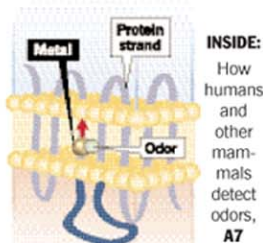
**H**eavy metal smells. While it may sound like music criticism, the conclusion is actually a new scientific model that may explain for the first time how humans and other mammals detect odors.

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The discovery is based on simple knowledge that inorganic chemists have had for a long time, but biologists have largely overlooked — things that bind to metals smell strongly and badly.

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The primary function of the olfactory system — the scientific name for the part of the body responsible for the sense of

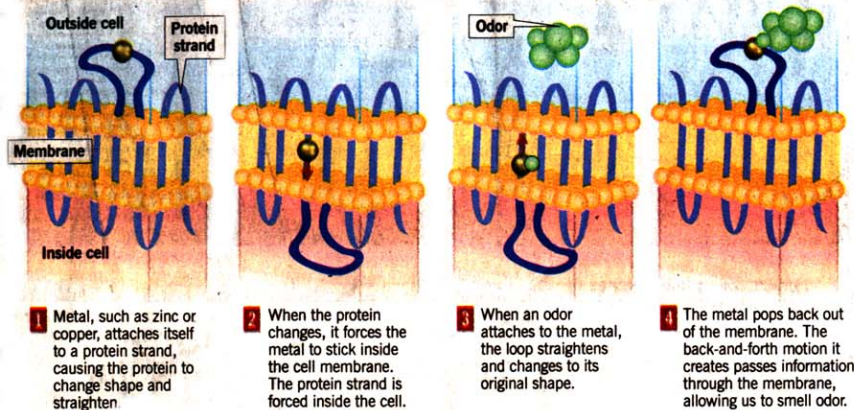


smell — is to help mammals avoid spoiled food, Suslick said. Bacteria often give off malodorous chemicals that stick strongly to metals, he said.

See Smell, A7

## Metals may be the key to smelling odors

Scientists at the University of Illinois at Champaign-Urbana say they have discovered that metals change the shape of smell proteins, called olfactory receptors, which enable us to detect odors. How the researchers say olfactory receptors in the nose work:



Source: University of Illinois at Champaign-Urbana

JACOB PERCY/POST-DISPATCH

as if it could bind to metals. The researchers produced that portion of the receptor in the laboratory and found that it could hold onto metals.

Olfactory receptors look like many other receptor proteins in that they have seven regions that cross a cell's membrane. Most of these receptor proteins are tightly stitched into the membrane, with only small loops of protein connecting the membrane-spanning regions, Suslick said. But olfactory receptors have one large, floppy loop that hangs outside the cell like a snag on a sweater.

That loop contains the metal-binding part of the protein. When metal ions bind to the protein, the floppy loop changes into a corkscrew-shaped helix that slides into the cell membrane. That action pushes a loop of protein inside the cell out the membrane, just as when a strand of yarn is pulled from the underside of a sweater to hide a snag. The protein is now primed to detect smells.

When a smelly chemical sticks to the metal ion, the loop pops back out of the membrane. That "shuttlecock" motion sends a signal to the smell-detecting cell that an odor is present, the researchers say.

Some smell receptors don't have metal-binding regions but may work in much the same way, Suslick said. Chemical bonds within the protein could mimic the action of the metal ions, he said.

Those receptors that do not bind metals — only a quarter of the smell-detecting proteins — may sniff out pleasant-smelling chemicals, Crabtree speculates. Aromatic chemicals such as esters, which give flowers their scent, don't stick well to metals, he said.

The model still needs more testing, Suslick said. But the re-

searchers have other clues that they may have sniffed out a winning theory. The first symptom of zinc deficiencies is the loss of the sense of smell, Suslick said.

But taking zinc supplements may not improve the sense of smell, he said.

"Most people get all the zinc they need from their diet," Suslick said, "and excess zinc won't buy you anything."

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## "Inorganic chemistry stinks."

Kenneth S. Suslick, University of Illinois at Champaign-Urbana chemist who led the research on how metals aid in detecting foul smells

## Smell

*U of I researchers say metals help detect odors*

Continued from A1

Those metals — zinc, copper, iron, magnesium and others — may come from food and water.

The Illinois researchers have used this bit of wisdom to develop an artificial nose that could help detect noxious chemicals. Metal-binding dyes in the artificial nose change colors when certain odors

latch onto the metals. The scientists began to wonder if the human nose worked the same way, Suslick said.

Robert Crabtree, an inorganic chemist at Yale University, thought it might. The idea came to Crabtree 25 years ago when a colleague broke a bottle of vile-smelling chemicals on the floor. The chemist knew that stinky stuff, such as the hydrogen sulfide that give rotten eggs their smell, or amines, which are responsible for fishy odors, stick to metals well. And people can smell rank odors better than pleasant ones, so Crabtree hypothesized that smell-receptor proteins probably contain metals.

The Yale chemist wrote a paper outlining his idea that day and later published it in a scientific journal.

That seemed to be the end of the story — except for good-natured ribbing from Crabtree's wife, who has never let him forget that his paper was never cited by other researchers.

"In science, you don't get many points for a proposal. . . . You've got to have proof," Crabtree said. "It took a long time before the proposal was testable."

To find out if metals play a role in smell, the Illinois researchers examined DNA sequences of the olfactory receptors. The sequences weren't hard to come by, Suslick said. Mammals have about 1,000 genes for olfactory receptors. That's about 3 percent of the human genome.

The scientists found a small portion of protein in about 75 percent of the receptors that looked

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