searcher John Niederhuber of the University of Wisconsin, Madison.

Colleagues say von Eschenbach's range of experience makes him ideal for the position. Robert Young, president of Fox Chase Cancer Center in Philadelphia, says that von Eschenbach "is deeply committed to investigator-initiated research" and brings "as much involvement with advocacy and surveillance groups as anybody who has led NCI in the past." Cancer biologist Bert Vogelstein of Johns Hopkins University in Baltimore, who has collaborated on two studies with von Eschenbach, says the new NCI director has "a keen appreciation of the value and potential of basic research" in understanding the origins of cancer.

This range of experience feeds into his interest in fostering collaborations to battle cancer. At the national level, he has worked to help increase patient access to cancer data and treatments; at M. D. Anderson, he oversaw a venture with drug companies to develop protease inhibitors for treating prostate cancer. Von Eschenbach is expected to be on the job in early January; his appointment does not require approval by the Senate.

–JOCELYN KAISER

HARVARD DISAPPEARANCE

Lab's Fate Uncertain As Search Continues

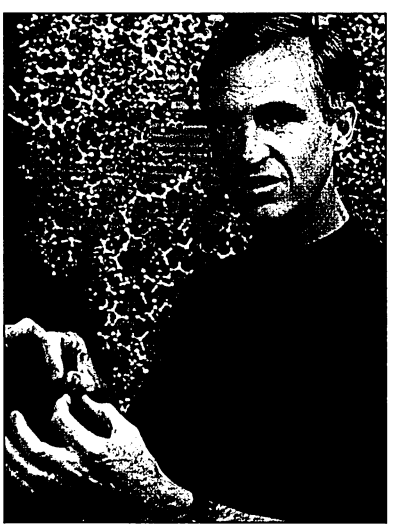
Tom Cech says he has been thinking about Don Wiley "hourly" ever since the Harvard biochemist vanished last month. As president of the Howard Hughes Medical Institute (HHMI), Cech has posted a $15,000 reward for information leading to an arrest in the baffling disappearance of his longtime scientific colleague, whose rental car was found at 4 a.m. on 16 November on a 2.9-kilometer-long bridge across the Mississippi River near Memphis, Tennessee. But Cech is also burdened with the knowledge that soon he may have to terminate funding of the HHMI investigator, a step that will disrupt the lives of some two dozen young scientists in Wiley's lab.

Police are still investigating the disappearance of the 57-year-old Wiley, a structural biologist who won the Lasker Prize for exploring how the body fights infections. The car was found several hours after he left a dinner with the advisory board of St. Jude Children's Research Hospital in Memphis. There are no indications of foul play, and Wiley's colleagues can't believe that he would have committed suicide. Harvard Police Chief Francis "Bud" Riley, who is in close contact with the Memphis police and the FBI, concedes that he has no idea what happened to Wiley. But he visits the Wiley lab periodically to keep the team apprised of the latest developments.

In addition to posting the $15,000 reward, HHMI has provided financial support to Wiley's family and dispatched its chief scientific officer, James Gavin, to meet with Wiley's lab. It even offered to hire a private investigator, which Harvard authorities declined. Individual pledges from Wiley's friends and colleagues have enabled Harvard and St. Jude's to post a separate $10,000 reward.

Friends and former students around the world praise Wiley as a brilliant and energetic researcher. "Don has had an incredible impact," says Lawrence Shapiro, a structural biologist at Mount Sinai School of Medicine in New York City. "He was the guy [who] everybody wanted to be." His vibrant personality created a collegial and productive lab, says biophysicist Brian Baker, who left Wiley's lab in August to take a job at the University of Notre Dame in Indiana. "His childlike enthusiasm toward science infected the whole lab."

Harvard biochemist Steven Harrison, who shares laboratory space and some students with Wiley but works on different projects, has taken on the overwhelming task of keeping his colleague's lab afloat. Harrison admits that work on the structure of viruses and human immune system proteins has been proceeding more "fitfully than usual." But day-to-day operations have resumed, he says, and regular lab meetings were scheduled to restart this week.



CREDIT: JON CHASE/HARVARD UNIVERSITY NEWS OFFICE

Missing. Don Wiley's research focuses on the structures of viruses and immune system proteins.

HHMI, which has continued funding the Wiley lab, has a policy of speedy terminations when an investigator dies. "It is irresponsible to keep labs open without mentors on an ongoing basis," says Cech. HHMI will discuss the situation next month if Wiley does not reappear. Harrison says he has already met with lab members individually to review their "research and career goals." Cech says that HHMI will help them find new scientific homes should that be necessary.

HHMI does not dis-

ScienceScope

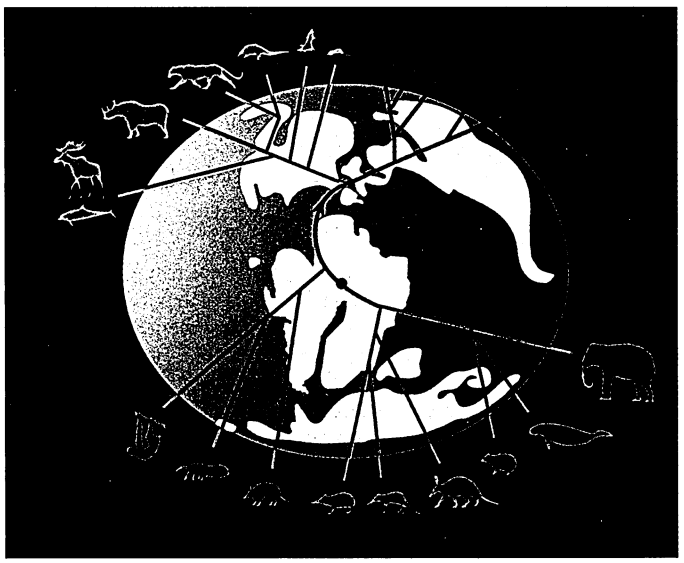
Budget Strings *Science* has learned that the National Science Foundation (NSF) is slated to get an increase of 4% to 5% in the president's upcoming budget request for 2003. That's pretty good during a war, observers say. But the money comes with some strings attached.

The biggest flap surrounds the White House's plan to transfer $121 million from four other agencies (*Science*, 7 December, p. 2066). Supporters of three Smithsonian Institution centers are howling the loudest about a shift of $35 million. But three other programs also take a hit: $19 million from the Environmental Protection Agency's Science to Achieve Results (STAR) program of environmental grants and graduate fellowships; $10 million from hydrology programs at the U.S. Geological Survey, and $57 million from the National Oceanic and Atmospheric Administration's Sea Grant program. The White House also wants to add $60 million to a math and science education partnerships program that will debut in 2002 with $160 million. But NSF may be forced to trim other programs.

International Ire European, Japanese, and Canadian officials blasted NASA last week for unilaterally scaling back plans for the international space station. At a 6 December NASA advisory group meeting in Washington, D.C., the partners rejected a U.S. money-saving move to trim the station's crew from six to three. "Totally unacceptable," said J. Feustel-Büechl of the European Space Agency. The Europeans plan to write a protest letter to U.S. Secretary of State Colin Powell. Meanwhile, NASA-Administrator-to-Be Sean O'Keefe said at his 7 December Senate confirmation hearing that it is his "fondest hope" to expand the station's crew. But soaring costs in the station and other programs are forcing NASA to "ride the crest of a wave we don't fully control."

Looking Up The European Union's (E.U.'s) Council of Research Ministers, meeting in Brussels on 10 December, has approved a $15.6 billion science budget for 2002–06—a 17% overall increase over the previous 4-year period. The Sixth Framework Program will include support for three new research areas: health-related research in genomics and biotech ($1.9 billion), nanotechnology ($1.2 billion), and food safety ($609 million). Andrea Dahman, spokesperson for E.U. research commissioner Philippe Busquin, expects the plan to win final approval soon from the European Parliament and the E.U.'s finance ministers. "We don't expect any major hiccups," she says.

Diego State University in California, but it is unlikely to settle the issue. The new reconstruction does help clear up some of the relationships between major groups of species, however, and "only with that [clarity] can we begin to understand how the genome evolved and focus on [subsequent changes in] form and function," says NCI's Stephen O'Brien, one of Murphy and Eizirik's collaborators.



Globe-trotting. Earth's four groups of placental mammals likely arose from an ancient southern continent.

Few dispute that the work demonstrates the power of Bayesian inference, a statistical tool developed in the 1700s for assessing how new information influences the chances that a current belief continues to be correct. It's like other statistical approaches in that "you have the same modeling assumptions," says John Huelsenbeck, an evolutionary biologist at the University of Rochester in New York. "But on top of that you have to incorporate your prior beliefs." In the past decade, researchers have coupled Bayesian inference with a simulation tool called the Markov chain Monte Carlo and applied it to many questions, from evaluating new drugs to protecting fisheries (*Science*, 19 November 1999, p. 1460). Researchers first subjected evolutionary trees to Bayesian inference in 1996.

Traditionally, researchers have built these trees by evaluating the degree of change in a given trait—limb length, for instance—or a given DNA sequence between supposed relatives. Heated debates have arisen, because the trees tend to differ depending on the data and analytical techniques used. Resolving these arguments would require the analysis of ever more species or DNA sequences, and many researchers hope that Bayesian inference will provide speedy answers. "It's fast, especially with large numbers of species or long molecules [of DNA] to be analyzed," says Sudhir Kumar, an evolutionary biologist at Arizona State University in Tempe.

Analyzing large numbers of species is exactly what Murphy and his colleagues had in mind. He and collaborator Mark Springer of the University of California, Riverside, had independently built evolutionary trees based on DNA from about the same range of species. By joining forces, "they finally have high statistical confidence to resolve the [uncertain] branches," Kumar points out. With the help of Bayesian inference, the researchers confirmed the existence of four so-called superorders, determined which superorder evolved first, and decided which orders within these larger groups shared a common ancestor. "In all respects the analysis was pretty sophisticated" and comprehensive, says Huelsenbeck.

The researchers found that placental mammals fall into one of four groups. One, called Afrotheria, includes elephants, aardvarks, and hyraxes. Another, the Xenarthra, covers armadillos, sloths, and anteaters. The much larger Euarchontoglires includes some of the more common mammals: rodents, rabbits, and primates, for example—a grouping "that's new and is strongly supported by the data," O'Brien points out. And carnivores, whales, cows, and horses make up the Laurasiatheria. Afrotheria is the oldest group, the team reports. The orders contained in this group originated in Africa, and some never left. They are followed by the Xenarthra, which live in South America, and finally by the other two superorders, which are common worldwide. Because the southern groups are the oldest, "it places the origin of the placental mammals in the south," O'Brien asserts.

The researchers also calculated that the two most ancient groups appeared a little more than 100 million years ago—during the breakup of the giant southern continent called Gondwana. "The [continental] split between Africa and South America may explain the earliest split among placental mammals," Springer suggests.

Therein lies the rub for some of their colleagues. "On one hand, what they write about higher level [evolutionary] relationships seems perfectly reasonable," comments Philip D. Gingerich, a paleontologist at the University of Michigan, Ann Arbor. "But on

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ScienceScope

World-Class Headache British academics have improved the quality of their research over the last 5 years, according to a new national review released this week. But the gains may cause headaches for government funders, who will be expected to reward the most improved labs with cash.

The Higher Education Funding Council of England (HEFCE) uses expert panels to grade university departments on their work; it then uses the results to divvy up more than $1 billion in annual infrastructure funding. Higher scoring labs win more cash. This year, 64% of the reviewed work was rated of national or international excellence, up from 43% in the last review. The jump "demonstrates the value of awarding research funds selectively to reward quality," says HEFCE chief Howard Newby.

But the council now must consider whether it can feed a bigger class of ribbon winners from a fixed funding pie. It planned to meet this week to discuss options, which could include tinkering with the reward formula and asking the government for up to $240 million in new funds.

Olsen, Tarter on the Move NASA's chief scientist is slated to become a top aide at the White House Office of Science and Technology Policy (OSTP). President George W. Bush will soon nominate neuroscientist Kathie Olsen (*right*) to be OSTP's associate director for science. If confirmed by the Senate, she will be one of two top assistants to OSTP chief John Marburger. Olsen has been NASA's top scientist since 1999 and spent more than a decade at the National Science Foundation.

Bruce Tarter, for 7 years director of the Department of Energy's Lawrence Livermore National Laboratory in California, announced last week that he will step aside once a replacement is found. Tarter is credited with steering Livermore, a mainstay of the nation's nuclear weapons complex, through the end of the Cold War, forging new roles in supercomputing and environmental research. But his tenure was marred by massive cost overruns in the National Ignition Facility, a giant laser, and last year he was denied a pay raise.

Contributors: Andrew Lawler, Jeffrey Mervis, Andrew Watson