of the time advancing the Administration's policy on Medicare reform. Currently, he sits on the Council of Economic Advisors.

FDA, though, doesn't deal much in academic issues. It faces an array of practical challenges, including an overhaul of its food safety division for improved biodefense; concerns about how to protect human subjects in drug trials; new worries about West Nile virus contaminating blood and transplanted organs; and a long-running budget battle. Without commenting on McClellan, FDA senior associate commissioner Murray Lumpkin confirms that the agency is confronting an unusual set of new obligations.

Those who know McClellan have no doubt he'll rise to the challenge. "He is gifted at searching out the room in the center where a compromise can be struck," says a former colleague at the Treasury Department. "I have zero concern about his ability to manage that agency."

One of McClellan's unique traits, says longtime friend and Harvard economist David Cutler, is his willingness to let the data overcome personal biases, as in a paper the pair produced showing that the benefits of new technologies to treat heart attacks outweighed their high cost—contrary to their expectations.

Cutler acknowledges, though, that McClellan probably wouldn't enjoy the "very political parts of the job," which might be "the things he'd do worst at or like the least." But Cutler and others who have worked with McClellan are convinced that his wide-ranging gifts will offset any shortcomings. **–JENNIFER COUZIN**

FRENCH SCIENCE

Scientists Blast Budgetary Bad News

PARIS—If the phrase "lies, damn lies, and statistics" hadn't already been coined, French researchers might have been tempted to do so last week when the government unveiled competing versions of its civil R&D budget for 2003.

Figures released by the Finance and Research ministries paint strikingly different pictures. According to the Finance Ministry, the 2003 budget would shrink by 0.8% to €8.65 billion—from €8.72 billion in 2002—whereas the Research Ministry has it rising by 1.4% to €8.84 billion. SNCS, a leading researchers' union, contends that the budget is in fact going down, and by week's end it had collected signatures from more than 1000 lab chiefs and rank-and-file scientists on a petition claiming that the cuts would have a "severe impact on the dynamism of our research."

The bizarre budgetary duet played out at the annual budget press conferences here last week. At the Research Ministry's unveiling, new minister Claudie Haigneré claimed that the R&D budget was even healthier than the numbers indicated, as her ministry intended to carry over "very probably more than" €720 million in unspent cash from 2002, thus raising the budget by 5.3%. The former astronaut's budgetary magic dazzled—and befuddled—a room full of journalists. "Is the budget up or down; is it a success or a failure?" asked one anguished reporter.

Analyses suggest that the finance figures are nearer the truth. The Research Ministry's projected gains include €250 million next year in extra budgetary authority, including the French Petroleum Institute's €200 million budget and money from a handful of other programs. Moreover, much of the funds that Haigneré intends to carry over are not under her control, asserts SNCS secretary-general Jacques Fossey. "More than half belongs to the laboratories; the public research institutes merely act as bankers," he says. By SNCS's calculations, the 2003 figure is a 1.3% drop, or about 3% after inflation.

Even though rumors of a 7.6% cut in civilian R&D proved unfounded, many scientists are furious. "This is one of the most catastrophic research budgets we have had in living memory," says chemist Henri Audier, a board director of the basic research agency CNRS. Spending on research grants would fall by 11% overall, with CNRS absorbing a 17% hit. "It will be very difficult to launch any new projects without sacrificing existing ones," Audier says. In another sleight of hand, the draft budget—which must be approved by parliament—would create 400 temporary (18-month-long) postdoc positions at the institutes while scrapping 150 permanent posts. Universities would fare a bit better, winning an extra 420 positions for lecturers and professors.

"In France," grouses one researcher, "every time the right comes to power, research is one of its first victims." That characterization, however, is rejected by Prime Minister Jean-Pierre Raffarin. "You will see that we will invest more in research in 2003 than in 2002," he claimed in a television interview. Haigneré, meanwhile, insists that the draft budget is "transparent and true." Observers expect the budget to pass with minor tweaks later this year. **–BARBARA CASASSUS**

Barbara Casassus is a freelance writer in Paris.

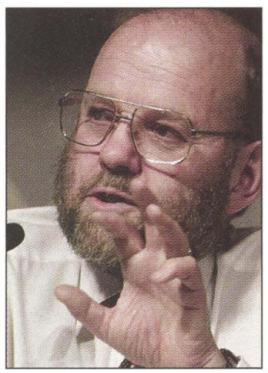
Looking on the bright side. Claudie Haigneré's figures show an increase for research; others' show a decrease.

CREDITS: (LEFT TO RIGHT) CARON PHILIPPE/CORBIS SYGMA; JOE MARQUETTE/AP

STEM CELL RESEARCH

Cloning Pioneer Heads Toward Human Frontier

BERLIN—The father of Dolly the lamb is hoping to blaze a new trail in the science of cloning: He plans to apply the technology in the controversial arena of human embryonic stem cell research. In a briefing for journalists here last week, Ian Wilmut, leader of the team at the Roslin Institute in Edinburgh, U.K., that 6 years ago produced the world's first mammal cloned from an adult cell, announced that his group will attempt to use nuclear transfer to create human embryos that are genetically identical to adult donor cells. These embryos would then be tapped for stem cell lines.



Pushing forward. Ian Wilmut wants to clone human cells.

Wilmut and his team are not the first out of the blocks to try nuclear transfer experiments with human tissue, but they appear to be the first to test the United Kingdom's new procedures for approving such studies. The creation of cloned embryos is allowed in the U.K. as long as a license is obtained from the U.K.'s Human Fertilisation and Embryology Authority (HFEA). An HFEA spokesperson confirms that Wilmut's group would be the first to apply for a license. So-called reproductive cloning—implanting a cloned human embryo into a surrogate mother—is illegal in the United Kingdom and is not being contemplated by Wilmut.

Several teams have attempted nuclear transfer using human embryos in secret—with little apparent success. Advanced Cell Technology (ACT), a biotech firm in Worcester, Massachusetts, reported last year that its scientists had produced early embryos but no blastocysts and therefore no

stem cells (*Science*, 30 November 2001, p. 1802). Roger Pedersen, now at Cambridge University, used private funding to attempt human nuclear transfer experiments when he was at the University of California, San Francisco, but he too failed to produce blastocysts. And newspapers have reported that scientists in China are attempting human cloning experiments, but peer-reviewed results have not yet emerged.

Wilmut, who was in Berlin to receive the Ernst Schering Prize for his nuclear transfer work, says he expects the licensing process to take about a year. The proposal must undergo rigorous reviews by at least four ethics committees and must be approved by HFEA's scientific and clinical review boards. The oocytes would be collected from women who are planning to undergo reproductive-tract surgery, Wilmut says, and donors would not be compensated.

The team's first goal is to create stem cell lines that could help researchers understand complex genetic maladies such as heart disease, Wilmut says. If cells from a cardiac patient could be cloned and a stem cell line created, for example, researchers could grow those cells into cardiomyocytes and perhaps learn more about what causes sudden heart attacks as well as possible ways to prevent or treat the condition. Wilmut says his team will not use human cells to shed light on the murky mechanisms governing how an adult-cell nucleus can be reprogrammed to direct embryonic development. Such work, he says, can be done in mice and cattle, from which oocytes are much easier to obtain.

Wilmut's research will be supported by Geron Corp. of Menlo Park, California, which funded much of the early work on embryonic stem cells and Pedersen's experiments with human nuclear transfer. Geron, through its acquisition of Roslin's spinoff company, Roslin Bio-Med, owns several patents on the techniques used to create Dolly. The company also claims exclusive commercial rights to several cell types derived from embryonic stem cells, including cardiomyocytes.

Other experts welcome Roslin's plans. "The scientific rigor of what Roslin produces" would give the field a boost, says Robert Lanza, vice president of medical and scientific development at ACT. Gerald Schatten of the University of Pittsburgh, whose efforts to clone rhesus monkeys have been stymied by faulty cell division in the resulting early embryos, predicts that human cloning, at least to the blastocyst stage, will be feasible. "Everything to date suggests that there are hurdles in cloning Old World primates, including humans, but there is no reason to think it will not eventually work," he says.

–GRETCHEN VOGEL

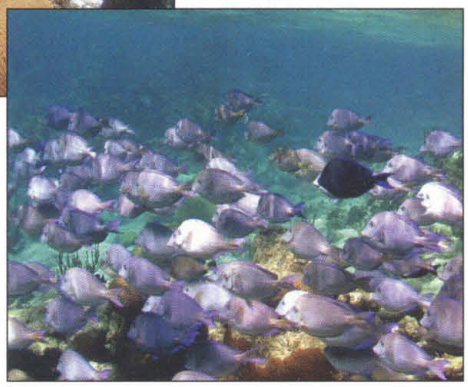
CREDITS: ANTHONY R. PICCIOLO/NOAA/NODC

OCEANOGRAPHY

Diagnosis and Rx for U.S. Coral Reefs

For more than a decade marine biologists have bemoaned the decline of coral reefs worldwide, citing global warming, disease, overfishing, and pollution, along with other causes (*Science*, 25 July 1997, p. 491). But good data have been scarce. Last month, a 5-year volunteer census of global reefs revealed more damage than expected (*Science*, 6 September, p. 1622). Now comes the most comprehensive look at U.S. reefs—and it, too, confirms many of the biologists' worst fears.

The report, *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2002*,* substantiates the degradation by various insults. It includes a breakdown of the problems facing 13 regions and some 20,000 square kilometers that come under the purview of the United States, as well as reefs surrounding its former territories Micronesia, the Marshall Islands, and Palau.



Guardians wanted. U.S. policy-makers are pushing for protection of coral reefs (*top*) and their denizens such as blue tang (*right*).

"It is the most sweeping statement of concern by a [U.S.] federal agency about the trajectory of coral reefs to date," says John Ogden, a marine biologist at the Florida Institute of Oceanography in St. Petersburg. Even so, comments Phillip Dustan, a marine biologist at the College of Charleston, South Carolina, "the report doesn't go far enough" in conveying the dire condition of reefs or the need for more research on their problems.

The effort dates back to 2000, when Congress, in the Coral Conservation Act, charged the 2-year-old interagency U.S. Coral Reef Task Force with producing a comprehensive inventory of reefs under U.S. jurisdiction. At the same time, Congress showed its increased concern for reefs by expanding federal support for reef research from $60.9 million in 1999 to $98.5 million in 2001, making such a survey possible.

The National Oceanic and Atmospheric Administration (NOAA), the U.S. Agency for International Development, the Department of the Interior, and about a half-dozen other agencies have now produced summaries of current conditions of reefs, projections for their futures, conservation efforts, and descriptions that focus on each region. As with other reports, this one highlights the rampant destruction of some reefs by disease, overfishing, pollution, storms, and global warming. The report "has brought all this [reef] information together in one place for people to see," says NOAA Administrator Conrad Lautenbacher.

In addition, in the works is an atlas of digital, color-coded maps of undersea habitats such as sea grass and sand as well as reefs. These maps are being made from high-resolution aerial photos.

An accompanying report† to Congress outlines 13 goals based on the new assessment. First on the list are more mapping and monitoring projects. Eight of the goals are concerned with reducing the damage done by people.

Ogden, for one, says these priorities should be reversed: "I believe it should be action first and research second." Lautenbacher is not swayed by this criticism, however. First and foremost, the agencies need the key baseline inventory that only mapping and monitoring can provide, he insists. But he also points out that now that the task force has proposed a unified strategy for protecting coral reefs where once there was none, it can now be debated and changed as needed.

–ELIZABETH PENNISI

* www.nccos.noaa.gov/documents/status_coralreef.pdf

† www.coris.noaa.gov/activities/actionstrategy/action_reef_final.pdf