nents of the new institute point out that an office lacks the grantmaking powers of a center or an institute, and the director has a relatively free hand in setting its budget.

Bryan said that he left NIH in large part out of frustration with the roadblocks that its structure posed to imaging research. He predicted that OB3 "will have to do what I did—pass the hat" among other institutes to obtain adequate funding. The current NIH structure also forces scientists to "artificially tailor their proposals to create the appearance of disease- or organ-specific research," says Bryan. Even then, he says, institutes may well "recast the research to fit their own missions."

Having an institute will allow imaging and bioengineering researchers to chart their own course, proponents argue. "Cancer people have no interest in talking to the lung people" about their findings, says Reed Dunnick, chair of radiology at the University of Michigan and a former NIH researcher, who also testified before the Commerce panel. "Nothing short of an institute will be effective in stimulating and coordinating biomedical research to the extent that is needed."

Yet the need for improved coordination is exactly why Varmus opposes the new institute. Before he left in December to become president of Memorial Sloan-Kettering Cancer Center in New York City, Varmus proposed a dramatic overhaul that would collapse NIH into a half-dozen institutes of similar size organized around major research themes. "The proliferation of institutes is hampering the overall function of NIH," he says. "Everyone wants an institute, and NIH has become too cumbersome for any director to manage."

Yet Varmus sees no sign that the trend toward disaggregation is abating. He predicts that, within 5 years, the residents of the new institute will demand a divorce into separate quarters for radiologists and bioengineers. And he guesses that, even if the bill fails this year, it will probably pass in the next Congress. "Once the train has left the station," he says, "there's no turning back."

–KATHY FISHER

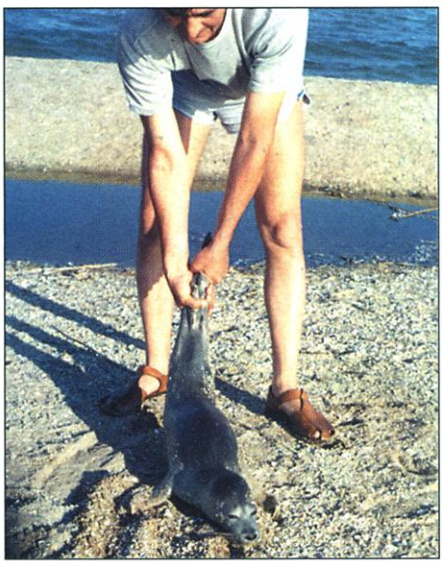
Kathy Fisher is a free-lance writer in Alexandria, VA.

VIROLOGY

Canine Virus Blamed in Caspian Seal Deaths

Canine distemper virus (CDV) has been identified as the most likely cause of a die-off of thousands of seals in the Caspian Sea earlier this year. Although the findings by two independent research groups allay fears of a threat to humans, they heighten concerns about the survival of the imperiled species.

Dead and dying seals began washing ashore in mid-April near the mouth of the Ural River in Kazakhstan, one of five countries bordering the world's largest landlocked sea. Normally shy, the small, mottled-gray seals would swim up to boats, rub their noses against the hull, and bark oddly, as if gasping for air, says Anatoly Beklemishev, a molecular biologist with the State Research Center of Virology and Biotechnology (VECTOR) near Novosibirsk, Russia. The first victims were pups, but as the die-off accelerated, the disease began to claim adults, too. Fearing that a presumed pathogen might be transmissible to people, Kazakhstan dispatched soldiers in body suits and gas masks to collect carcasses for incineration.



Grim day at the beach. Russian scientist prepares to take tissue sample from ailing seal.

Environmental groups immediately pointed a finger at oil companies in the region that were operating the Tengiz offshore oil field and exploring the Kashagan field. They claimed that sulfur dioxide discharges were corroding the animals' lungs. In June, Kazakhstan's environment minister asserted that pollution from the oil fields and pesticides were degrading the seals' health, citing recent studies showing high levels of DDT, an organochloride pesticide, in Caspian seal blubber. But the companies have denied the charges, and scientists say that DDT alone could not account for the seal deaths despite the fact that organochlorides have been implicated in lowered immune function in seals.

Working with tissue samples from 16 seals, a team led by Seamus Kennedy of the Department of Agriculture and Rural Development in Belfast, U.K., found lung tissue and epithelial cells riddled with microscopic lesions characteristic of morbillivirus infection—the viral group that includes CDV and a pathogen recently discovered in seals, phocine distemper virus. The researchers nailed canine distemper using a polymerase chain reaction (PCR) test specific for the

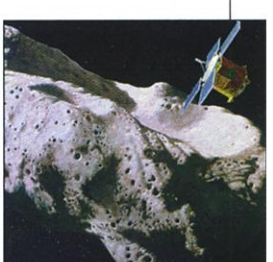
CREDITS: (TOP TO BOTTOM) VECTOR; NASA

ScienceScope

Sue Them All! There's a surprise twist in a long-expected claim for damages filed this week in the death of Jesse Gelsinger, an 18-year-old volunteer in a gene therapy trial. Paul Gelsinger, Jesse's father, seeks unspecified compensation from the University of Pennsylvania (which hosted the trial), the director of Penn's Institute for Human Gene Therapy, several clinicians, and a biotech firm. But the suit, filed in Pennsylvania state court, also names a prominent ethicist at Penn, Arthur Caplan, who advised the researchers.

Gelsinger's attorney, Alan Milstein of Camden, New Jersey, says that Caplan was named because he helped to shape the trial and the consent document that Gelsinger signed. But Caplan says his involvement was purely informal. "It's standard in such cases to name as many people as possible and let judges and juries sort it out," Caplan notes, adding, "I worry that this may intimidate bioethicists from talking to their colleagues." Penn has already acknowledged "weaknesses" in its oversight of the trial, but says they "did not contribute to Jesse's death." The university is negotiating with Gelsinger on a settlement.

The End Is NEAR NASA officials have told controllers of the NEAR-Shoemaker spacecraft that they can send their charge on a suicidal plunge to the surface of asteroid Eros. Running short on fuel and money, the $125 million craft will execute a "controlled descent" to the surface on 12 February after spending a year orbiting Eros. In return for obtaining the most detailed pictures ever of a celestial body other than Earth's moon (see pp. 2085–2104 for the latest from Eros), mission scientists will follow the lead of Lunar Prospector, which was intentionally crashed into the moon last year in a search for water deposits.



Never designed to touch down anywhere, NEAR-Shoemaker will be pulled into a final embrace with the 34-kilometer-long asteroid just before Valentine's Day, hitting the surface at the speed of a brisk walk. Controllers will listen for a day or two for any word of how the "landing" went, but "there is nothing planned after that," says mission scientist Andrew Cheng of Johns Hopkins University's Applied Physics Laboratory in Laurel, Maryland, where the spacecraft was built and is now controlled.

CDV fusion gene. The diagnosis came as no surprise to Kennedy's group, which had found a CDV brain infection in one seal off Azerbaijan during an investigation into a slight rise in Caspian seal mortality in 1997.

The findings will appear in the November-December issue of *Emerging Infectious Diseases*. However, they were posted last week on the journal's Web site (www.cdc.gov/ncidod/eid/vol6no6/kennedy.htm) after a Russian-Kazakh team released its preliminary findings (www.istc.ru/istc/website.nsf/fm/z02PressinfoE+1). That group, led by Beklemishev and Aleksandr Shestopalov of VECTOR, a former bioweapons lab, took samples from seals at a rookery on Maly Zhemchuzhny Island off the Russian coast and from a rookery on Kazakhstan's Bautin Bay. VECTOR scientists had studied a similar die-off in Russia's Lake Baikal in 1987–88 that was later attributed to CDV.

Shestopalov believes that CDV has an accomplice. PCR tests of the recent samples revealed that some individuals were infected with seal influenza, and Shestopalov says that the symptoms observed by his team—including massive loss of body fat, shrunken spleens, and blood-filled lungs—cannot be attributed to CDV alone. He intends to test healthy seals for antibodies to various pathogens.

The die-off, which has subsided after claiming as many as 20,000 victims, is another blow to the long-term prospects for the Caspian seal, a population of about 400,000 animals that is listed by the World Conservation Union as vulnerable to extinction. Scientists also plan to keep a close eye on the seals by watching them on the ice throughout the winter. "Just how high the mortality will be is anybody's guess," says Kennedy.

–RICHARD STONE

U.S. SPACE SCIENCE

Earmarks, Rising Costs Threaten NASA Missions

NASA space science chief Ed Weiler is already scrambling to match his budget with his priorities, which include martian rovers, an orbiter to circle Europa, and a host of other spacecraft designed to study the sun, black holes, asteroids, and other heavenly bodies. And his task won't get any easier in coming weeks and months. Besides the missions already planned, Weiler likely will have to pay for several Earth-bound subjects, such as museums, Web-technology projects, and even plant studies, that NASA hasn't even proposed.

The House and Senate are working out a final 2001 budget plan that should leave NASA with a small increase over this year. But the increase will be more than swallowed up by projects costing hundreds of millions of dollars that politicians have added to satisfy their constituents. At the same time, rising mission costs in the wake of two recent Mars failures are forcing agency officials to steal money from lower priority efforts such as a trip to Pluto. The two trends, warn NASA and science community officials, could prove devastating to NASA's space science efforts.

Last week a Senate spending panel voted to give the space agency $13.84 billion—less than its $14 billion request but $243 million more than this year. One piece of good news for NASA was $20 million to begin Living With a Star, a solar research effort axed by the House (*Science*, 28 July, p. 528). But agency supporters who praised the bill, such as Senator Barbara Mikulski (D–MD), ranking minority member of the Senate spending panel, appear to have overlooked nearly $300 million in pork projects, also called earmarks, along with a $100 million cut in the overall account for science, aeronautics, and technology. The House likely will add its own pork-barrel projects when the two chambers meet in conference to work out a final budget. It's not clear how much space science received in last week's actions, which also didn't specify how the cuts would be distributed.

These "stealth cuts," as one Administration official called them, could unravel NASA's space science program, for which the agency requested a 10% boost, to $2.4 billion. "The numbers don't look that bad, but the results could be devastating," he says. "These earmarks are extraordinarily damaging," adds Steven Squyres, an astronomer at Cornell University and chair of NASA's space science advisory panel. But "the end game" for the 2001 budget hasn't been reached, says a Mikulski aide, and there is still a chance for more money.

A closer look. NASA says past failures are forcing up costs of planned missions such as the Europa orbiter.

CREDIT: JPL/NASA

Among the proposed pork projects is $3 million for coastal management studies at the University of Southern Mississippi, which pleases Senate Majority Leader Trent Lott (R–MS), as well as $2.5 million for a composite technology institute in West Virginia, a boon for former majority leader Robert Byrd (D–WV). There's also $2.5 million for a Hawaii museum, and $3 million to study the effect of weather and pathogens on genetically modified plants at a plant center in Missouri, the home state of Senator Christopher Bond (R), who chairs the spending panel that handles the NASA budget. The House did not add any earmarks in its $13.7 billion proposal for the agency, but Administration and congressional sources expect to see them added in conference.

Weiler isn't panicking yet. "I'm more concerned about the doubling of costs of the Pluto and Europa missions," he says. He recently ordered a halt to the Pluto mission after costs soared to $800 million, although he says the mission has not been canceled. The trip to Jupiter's moon Europa remains on target for a 2006 launch, despite its overruns, although Weiler says it could slip by a year. A new series of small missions called Explorer has been put on hold for as long as a year after costs crept up.

The increases stem in part from the recent Mars failures, and a resulting report that blamed poor management and insufficient tests of the hardware. "It's forcing people to take a closer look" at each mission, says Weiler, adding that such conservatism breeds cost increases. Weiler has also ordered the shutdown at year's end of the Extreme Ultraviolet Explorer, which since 1992 has been conducting an all-sky survey. "This is premature," says Fred Walter, an astrophysicist at the State University of New York, Stony Brook. "But the user community is fairly limited, and so it doesn't have a lot of support." NASA officials say the mission has been fulfilled and that the issue was more priorities than operations costs.

The rising costs and delays worry some space scientists. "Signs of stress cracks already are appearing," says Claude Canizares, a Massachusetts Institute of Technology physicist and chair of the National Research Council's Space Studies Board. "But the program probably can make it if it doesn't have to absorb big cuts." Weiler agrees that the situation is manageable if he can avoid paying for political pork. "If we get a bunch of earmarks, the only place we can get money is by canceling programs," he warns. "Pluto is only the beginning."

–ANDREW LAWLER