which is what the new sightings suggest is going on. With 206 GeV, there's just enough.

The extra month of research is meant to double the amount of data taken at this highest energy. That's almost certainly not enough to settle things for sure, but it might add more hints of a 114-GeV Higgs—or, if no further events are seen, rule out the possibility. As John Ellis in CERN's theory division explains it, "What you are looking at is not a paper saying 'Discovery [of a Higgs].' But if the effect is repeated you might get a paper saying 'Evidence ... ,' while at the moment all you could get would be a paper saying 'Indications. ...' " Dornan, though, points to the possibility of a "golden event" in which the Z decays into a pair of electrons or muons. A distinctive signature unlike anything expected in the background, that event would cry out for a Higgsian explanation. Such events are expected only about an eighth as often as the four-jet events, so the chances of seeing one in the next month may not be good. But if one were to turn up before 2 November, there might be a case for running LEP longer still. "How the management would take such a case," Dornan says, "is unclear. We've been told that there's no way it could be kept on after [2 November]. But we'd have to see."

Barring a golden event, the likelihood now is that any "Discovery" paper will come not from CERN but from the Fermi National Accelerator Laboratory (Fermilab) near Chicago. Next year scientists there will start using their improved Tevatron. This accelerator works at much higher energies than LEP, but because it uses protons and antiprotons, which are composed of quarks, rather than electrons and positrons, which have no subcomponents, its collisions are messy and only a fraction of the beam energy goes to producing new particles. The upgraded Tevatron's beams are meant to be 100 times brighter than before, and this means it may produce a measurable number of 114-GeV Higgs bosons.

According to Mel Shochet of the University of Chicago, who is part of the CDF detector team at the Tevatron, it will take a year or more to know for sure whether LEP did indeed glimpse something in its last few months. If that happens, and Fermilab discovers the Higgs, expect diplomatic niceties over the credit due to the LEP experimenters—niceties in which the distinction between the indications seen today and the evidence that might be seen by the end of October could play a crucial role. And expect excitement over the LHC, which operates at energies 10 times greater than the Tevatron's, to escalate further. As Ellis points out, a Higgs at 114 GeV would effectively guarantee that the Standard Model breaks down at energies easily accessible to the LHC, and thus that the new machine will be exploring rich realms of discovery from day one—with no pesky time limits. **–OLIVER MORTON**

Oliver Morton is a writer in Greenwich, England.

NIH

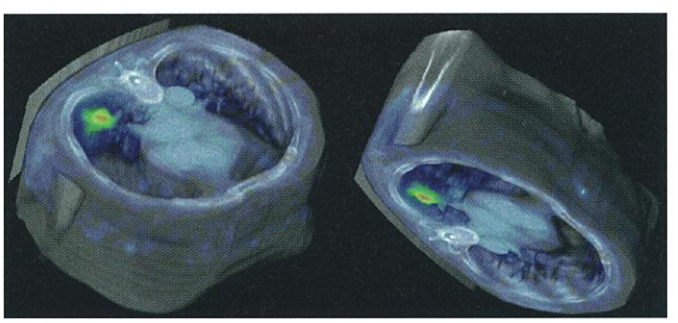
Imaging Institute Picks Up Momentum

The National Institutes of Health (NIH) may soon have a new offspring. Last week a House panel approved the creation of the National Institute of Biomedical Imaging and Bioengineering (NIBIE) despite pleas from top NIH officials that such a move will balkanize research. The bipartisan proposal, which is also backed by Democratic presidential candidate Al Gore, may have enough momentum to sail through Congress by the time it adjourns early next month. Even if it falls short, NIBIE reflects the growing desire of segments of the biomedical community to have their own address on the Bethesda campus.

"Imaging is used as a tool in all the institutes, but there is no home at the NIH for the basic research that is essential to develop new imaging techniques and technologies for the 21st century," University of Pennsylvania radiologist Nick Bryan, a former head of imaging research at NIH's clinical center, told the House Commerce Committee on 13 September, 1 day before its health and environmental subcommittee approved the measure. "Imaging is based on mathematics and physics, not the biological sciences that underlie most of the research in the current institutes."

A separate institute "makes no sense," argues Marvin Cassman, director of the National Institute of General Medical Sciences, one of 25 NIH institutes and centers. NIH already makes allowances for those differences, he says, and its organization by major disease or biological system better addresses societal goals. In addition, he notes, radiologists aren't alone in feeling that their needs aren't being met. "There isn't a field of science that NIH supports that does not feel it is neglected, underfunded, or in some way mistreated," Cassman says.

The House bill, H.R. 1795, is a marriage of proposals from Representative Richard Burr (R–NC), who wanted to give his medical-imaging constituents a bigger piece of the NIH pie, and Representative Anna Eshoo (D–CA), who was looking out for bioengineers in her home state. The bill would authorize spending at current levels for bioimaging and bioengineering, which NIH estimates stood at $840 million in 1998. Last year a congressional spending panel signaled its support, warning NIH that "the present organization does not accommodate basic scientific research in these fields and encourages unproductive diffusion of imaging and engineering research." The lobbying effort includes 40 professional societies representing more than 100,000 physicians, radiological technicians, bioengineers, and imaging scientists, and has signed up 169 co-sponsors. Vice President Gore has even tucked the idea into his 191-page economic plan, as part of a discussion of the role of technology in improving health care.



Two for one. A combined PET and CT scan of a patient with lung cancer (red spot) illustrates a technology stemming from the type of basic research a new imaging institute would fund.

NIH has not been oblivious to all this political interest in a red-hot research area. In 1997 then–NIH director Harold Varmus linked the relevant pieces on campus into a Bioengineering Consortium (*Science*, 5 June 1998, p. 1516). This spring NIH raised the profile of the field by creating an Office of Bioengineering, Bioimaging, and Bioinformatics (OB3) that reports to acting NIH director Ruth Kirschstein. But propo-

CREDIT: IMAGE REGISTRATION VIA MIAMI FUSE, C. MEYER/UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

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.

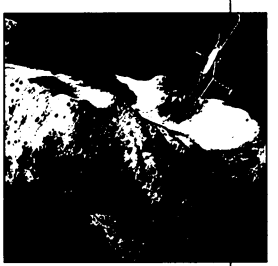
Working with tissue samples from 16 seals, a team led by Seamus Kennedy of the Department of Agriculture and Rural Development in Belfast, U.K., found lung tissue and epithelial cells riddled with microscopic lesions characteristic of morbillivirus infection—the viral group that includes CDV and a pathogen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

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.

CREDITS: (TOP TO BOTTOM) VECTOR; NASA