Accused researcher fights back

About three years ago, a Boston University research unit was dropped from participation in a large collaborative cancer research project, and its reported data were expunged from the records of the Eastern Cooperative Oncology Group after falsifications in patient records were discovered. Researcher Marc J. Straus, who headed the unit, and several colleagues were asked to resign after the university examined charges of data faking. Straus moved on to the New York Medical College at Valhalla, where he later received another cancer research grant. The controversy surrounding events at B.U. and Straus's second grant has, over the past year, attracted increasing attention as several other cases of data falsification and plagiarism have been uncovered (SN: 5/23/81, p. 331). The Boston Globe ran a five-part series on the Straus affair last summer, and the episode is being investigated by the National Institutes of Health.

Last week, three days after a Senate committee criticized National Cancer Institute director Vincent T. DeVita for the agency's handling of Straus's second grant application, Straus made his first public statement about the subject before the President's Commission on ethics at a Boston hearing.

The allegations that he had faked research data while at B.U. are "absolutely false" and "maliciously made," Straus told the Commission. By his account, the records were falsified to discredit him after he had placed research fellow Robert J. Polackwich on disciplinary probation and attempted to fire a nurse in the unit, Mary Jane Rimmer, for poor performance. Straus had been attempting to improve recordkeeping and standards for the project from the time he had taken it over and had met with resistance, he said in Boston.

Straus urged the Commission to recommend that some procedure for reviewing allegations against researchers "by a properly empowered blue ribbon panel, which will conduct a full evidentiary hearing under oath," be established, saying he has not in three years been given a fair hearing by his scientific peers despite repeated efforts to obtain one. An issue "of monumental importance," Straus said, is providing safeguards for scientists confronted with such allegations, whose careers could be ended by unproved, untrue charges.

Later in the day, Straus took another step in his effort to refute the charges leveled at him in 1978—he filed suit in federal district court against five other former colleagues.

A complaint charging "interference with contractual and advantageous relations, and conspiracy" asks for $3 million in damages for each of three counts from physicians Polackwich and Gregory Medis and nurses Stephanie Richards, Rimmer and Silvia Dias, according to Straus's lawyer Andrew Good, of Boston. □

Ready clone: Zebra fish by the hundreds

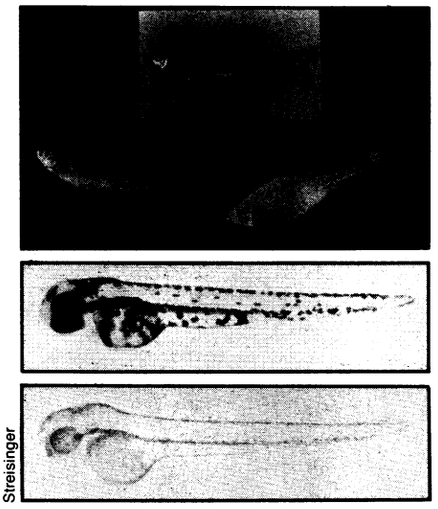
Hundreds of genetically identical zebra fish are being raised by biologists at the University of Oregon. These clones of the popular aquarium fish are expected to allow scientists to do more powerful genetic analyses than has been possible with any vertebrate.

The key to the production of these clones is fish with two identical sets of chromosomes. George Streisinger and colleagues get such homozygous fish by activating eggs with genetically impotent sperm. They then allow the single set of egg chromosomes to replicate while the cell is prevented from dividing. The adult resulting from such an egg has two identical sets of chromosomes in each cell and the same single set in any egg or sperm. Therefore, if the procedure is repeated on the eggs of a homozygous female all the offspring are genetically identical. A clone of up to 200 fish can be obtained in this way.

A similar, but much more cumbersome, strategy has been used to create homozygous mice (SN: 7/28/79, p. 68). One set of mouse chromosomes grouped in a pronucleus immediately after fertilization must be removed by delicate surgical techniques. In the work with fish the infertile sperm provide no genetic material and the only manipulation necessary is a heat shock or period of hydrostatic pressure to prevent cell division immediately after the chromosomes replicate. Once established, a clone of zebra fish can be maintained by normal sexual reproduction.

Most of the clones are made up predominantly of females, but males can be created hormonally. Exposure to male hormone for two weeks beginning one day after fertilization yields a group in which the majority of fish produce functional sperm. Little is currently known about the genetic basis of zebra fish sex determination, and the researchers were surprised to find that some clones naturally are predominantly male.

The Oregon scientists now have 55 separate clones of zebra fish. Some contain a few individuals with characteristic physiological abnormalities, demonstrating that some deleterious genes do not affect every homozygous individual.



Streisinger

Clones of zebra fish make genetic mutations easily visible. Top adult is a normal zebra fish, about 3 centimeters long. Other adults show pigmentation mutations. Embryos (3.8 millimeters long) three days after fertilization already show pigment differences between normal (upper) and mutant fish.

The advantage of homozygous fish for genetic experiments is that even a recessive mutation, which would normally be masked by the gene on the other chromosome, is immediately obvious in the homozygous individual. Streisinger and colleagues are currently studying mutations that change the pigmentation of the zebra fish. But they plan to devise behavioral tests involving feeding to find genetic abnormalities of the visual system.

In the May 28 NATURE the scientists suggest that similar genetic methods may be applicable to such edible fish as trout, salmon and catfish. "In analogy with common agricultural practice, it may be possible to maintain clones for the generation of high-yield hybrid lines for harvest," they say. But they warn that any clone contains only a very small fraction of the genes found in the entire population, so, should such fish farming become widespread, it will be crucial to preserve large fractions of the natural populations in their natural environment. □

Cancer institute under scrutiny

Congress, along with the President, has decided that the National Cancer Institute budget should exceed $1 billion annually, but it also has the authority to examine how NCI spends those funds and to make the agency change its spending procedures if there are indications of mismanagement. And there have been indications of such abuse during the past several years. For instance, each time an auditing group reviewed NCI contracting in the past three years, it discovered lax surveillance of contracting, cozy relationships with contractors and tolerance of apparent fraud. The most blatant example of this could be found in NCI awarding a $910,000 research grant in March 1980 to a scientist — Marc Straus — who had been

charged in 1978 with falsifying research data (see preceding story).

Consequently, the Senate Labor and Human Resources Committee, headed by Sen. Orrin G. Hatch (R-Utah), undertook a three-month investigation and then held hearings on June 2 to study the question of mismanagement at NCI. Among other things, the committee heard from the Office of the Inspector General of the Department of Health and Human Services, which had reviewed NCI contracting operations in 1978 and again in 1980, that the deficiencies they found had been largely ignored. The committee heard from a former NCI program manager who testified that the contract for the bioassay program is not properly structured for the critical job of determining relevance to humans of tests of suspected chemical carcinogens in lab animals. And the committee also heard the views of the Director of NCI — Vincent T. DeVita — on contracting inadequacies. DeVita defended his agency's $910,000 grant to Straus on the grounds that charges against Straus had not yet been proved. However, DeVita acknowledges the validity of many of the accusations against NCI — for instance, that there have been flaws in how new contracts are developed and how old ones are changed or phased out because scientific staff at the Institute have viewed management of the contract much as they have that of the grant (a mechanism more familiar to them) and because insufficient staff have been allocated to the management of contracts. DeVita then said: "I pledge we will in fact do a better job."

In fact, DeVita claimed that NCI has already been attempting, since last year, to correct some of the contracting problems that surfaced during the hearings. For instance: "We established a two-tiered system for overview of contracts by independent groups of experts drawn from outside the federal government. This system includes concept review and technical review and is consistent for all of the Institute's research and resources contracts .... In addition to concept and technical review, Presidentially-appointed members of the National Cancer Advisory Board are kept informed of concept review decisions .... Further, my staff and I periodically review all of the Institute's contracts to assure that they are needed, properly classified and appropriately funded. Our current overview system now is a dual review of contracts — concept and technical merit — each conducted by separate groups of non-NCI experts. Total program overview is by the NCAB and the NCI Director and his staff."

But as a spokesman for the Senate committee told SCIENCE NEWS, "We want to see the proof of it" and will give NCI 90 days to provide evidence that this is really the case. If the committee is not satisfied after 90 days that NCI is shaping up, then the committee will hold more hearings on the matter. □

Endangered species: Redefining harm

Last week the Interior Department proposed changing the definition of harm under Section 9 of the Endangered Species Act (ESA). Lawyers within the agency contend that the move would clear up ambiguities and have no economic, biological or legal repercussions. But a number of biologists and economists within both that agency and environmental watchdog groups are challenging the assertion. They claim instead that the move could drastically weaken endangered-species protection by wiping out criminal prosecution of individuals who destroy the critical habitat of a species listed as endangered.

The issue is no small one; ESA's drafters maintained that the principal threat to an endangered species is destruction of its habitat.

ESA prohibits the taking of an endangered species and defines "take" to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or to attempt to engage in any conduct. "Harm," in turn, has been defined as any act or omission that injures or kills wildlife, including those that annoy a species to the point of disrupting essential behavior such as breeding, feeding or sheltering. Environmental changes causing such effects are also termed harmful. But the new proposal would eliminate environmental modification or degradation as evidence of harm.

"It's just one more step in a carefully orchestrated program to gut the [Endangered Species] Act," asserts Peter Holmes, with Defenders of Wildlife. "I don't want to sound alarmist about it," he says, but adds that Interior Secretary James Watt told the endangered species program manager that he was in favor of the program as long as it wasn't used to stop construction projects. And more than anything else, Holmes says, that's what critical-habitat designations do.

Several environmental groups will fight the proposed move, if necessary with litigation. They are also fighting several other recent actions the agency has taken that they see as weakening endangered-species protection. □

Rechargeable pain relief

Johns Hopkins Univ.

Implanted electrical devices to stimulate nerves and thus relieve intractable pain have been in use for a few years, but they've either been supplied by an external power device that a patient wears, or contain a battery that wears out in a year or two, requiring the patient to undergo surgery to have a new device implanted. Now a rechargeable electronic device that pain patients can wear indefinitely has been designed by Donlin Long and Robert E. Fischell of Johns Hopkins University in Baltimore, Donald S. Friedman of the Goddard Space Flight Center in Greenbelt, Md., and Alfred E. Mann and Joseph H. Schulman of Pacesetter Systems in Sylmar, Calif. It is called a Human Tissue Stimulator. The HTS is similar in design to the special nickel-cadmium batteries present in spacecraft. A patient can recharge it weekly by holding a coil next to the area where the HTS is implanted. The coil provides an alternating magnetic field that recharges the HTS. Pictured here are a patient, Larry Herrington, who has had an HTS implanted under his left arm since March to provide pain relief, and Long. Long is operating the hand-held controller that Herrington himself usually uses to turn the HTS on and off. (The controller is not the same as the coil that Herrington uses to recharge the HTS.) A computer is used to program the pulse width, amplitude and frequency of the electrical output of the HTS.