

The NIH Record

Eminent Neurogeneticist To Deliver Guthrie Lecture

Dr. Seymour Benzer, a world-renowned authority in the field of neurogenetics, will present the fourth annual Marjorie Guthrie Lecture in Genetics on Thursday, Apr. 10, at 8:15 p.m. in the Masur Auditorium at the NIH Clinical Center, Bldg. 10.



Dr. Benzer

The lecture, entitled "Genes, Neurons, and Behavior in *Drosophila*," is sponsored jointly by the National Institute of Neurological and Communicative Disorders and Stroke and the National Institute of General Medical Sciences.

Dr. Benzer, an expert in gene structure and function, performed his early research on the virus known as bacteriophage. In 1971, he won a Lasker Award for splitting the bacteriophage gene.

In later studies with *Drosophila*, the common fruitfly, he linked behavior to genetic characteristics—research important in understanding the molecular components of behavior. He has recently begun using monoclonal antibodies to study how genes influence the development of the nervous system.

Dr. Benzer is the James Griffin Boswell professor of neuroscience at the California Institute of Technology. Before joining Cal Tech in 1967, he was faculty member at Purdue University (1945-1967), Fulbright research fellow at the Pasteur Institute in Paris (1951-1952), and senior National Science Foundation postdoctoral fellow at Cambridge University in England (1957-1958).

Born in New York City in 1921, he received his Ph.D. degree in 1947 from Purdue Univer-

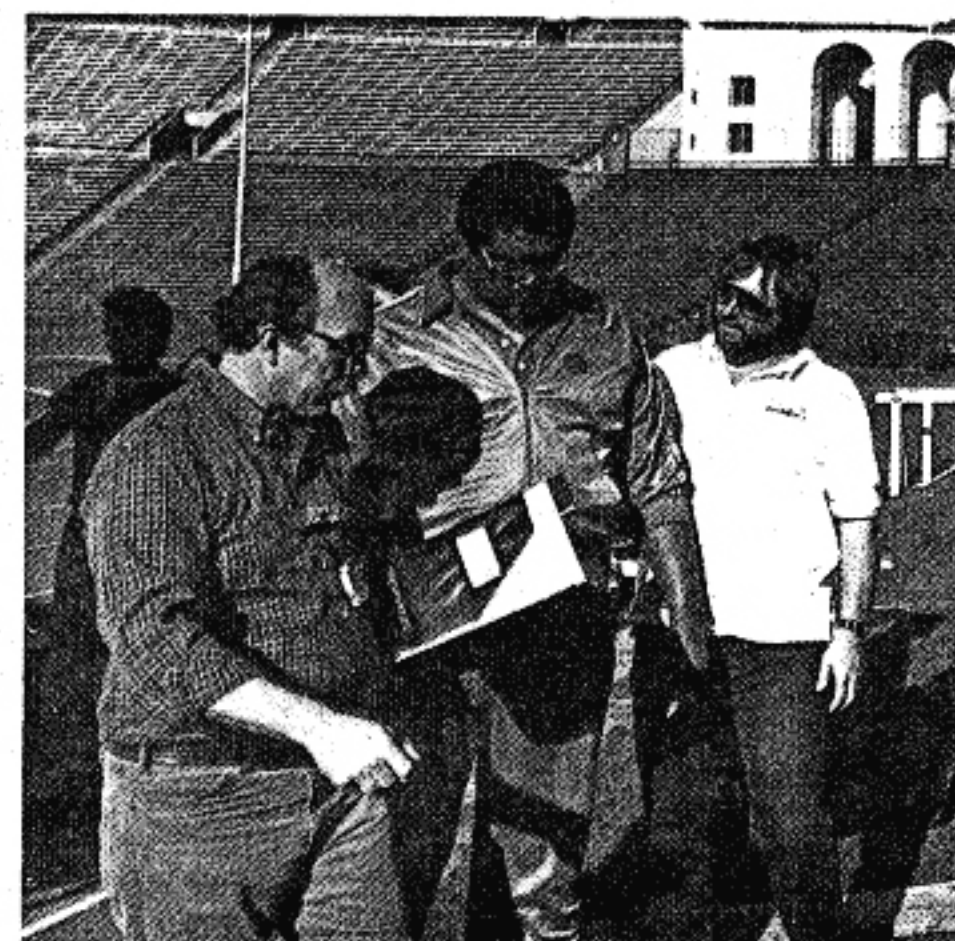
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Black NFL Football Stars Join with NCI, AARP To Alert Black Americans on Cancer Prevention

Stars from the National Football League will take part in the National Cancer Institute's "Joint Health Venture" (JHV) to increase cancer prevention awareness at the community level among black Americans. More than a dozen active or retired players—including Rosey Grier, Art Monk and Billy Sims—are expected to appear on television and at major cancer meetings over the next few years.

Mel Blount, NFL director of player relations and a member of Commissioner Pete Rozelle's staff, said: "The hundreds of black NFL players, coaches and administrative people are looked upon as role models. By teaming up with the National Cancer Institute, we have a priceless opportunity to give the message of cancer awareness the importance it deserves in the black community."

JHV was designed by the National Cancer Institute to help close the widening cancer mortality gap between black and white Americans. Over the past quarter century, the cancer death rate for blacks rose 22 percent while the rate for whites was rising only 3 percent. By adding intensive publicity and distributing national print and media materials at the grass roots level, communities can now take an active part in reversing the trend.



Rosey Grier (c), former member of the Los Angeles Rams 'Fearsome Foursome' defensive line, gets ready to shoot the first NFL player TV message on cancer awareness at the LA Coliseum. (The other two men shown are the director and assistant director of the TV spot.) In the background can be seen some of the arches and seats in the coliseum, the scene of Rosey Grier's onetime football triumphs.

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Antiviral Drug Tested by NCI and Other Scientists 'Revives' Immune System of Some AIDS Patients

A drug administered for AIDS—tested on 19 patients—has brought about increases over the short-term in the number and function of T cells in some patients and may keep the virus from multiplying at certain doses, scientists reported in the Mar. 15 issue of *Lancet*, the British medical journal. The findings are by scientists from the National Cancer Institute, Duke University Medical Center, and Wellcome Research Laboratories.

The 19 patients—18 males and 1 female—were given the antiviral drug azidothymidine (also known as AZT, "Compound S", and 3'-azido-3'-deoxythymidine) intravenously and orally for 6 weeks, Drs. Robert Yarchoan and Samuel Broder of NCI said.

Dr. Yarchoan said, "The most significant aspect about this study is that it shows that the immune system of an AIDS patient can at least partially reconstitute itself if the patients are given a drug which blocks the replication of the virus." He cautioned, however, "that although patients receiving azidothymidine showed some improvements, they still have AIDS. We do not know if the drug will be

useful for patients in the long run. We have no evidence that AZT is a cure for AIDS."

Dr. Broder added that the ability to give this drug for long-term courses will depend on an understanding of how the drug is metabolized within cells and how it disturbs normal cell metabolic pathways.

Fifteen of the 19 patients had increases in the number of their circulating helper-inducer T cells, an important arm of the immune system which is characteristically depleted in AIDS patients. Skin test reactivity to antigens were also restored in six of the patients, suggesting that the T cells were working better.

It is not known how long-lasting these changes will be. In some patients, fevers decreased or ceased, fungal infections of the nailbed cleared up without antifungal therapy, and patients experienced improved appetite and weight gain, the doctors said.

In addition, the drug effectively crossed the brain-blood barrier. This may be a crucial step in preventing encephalopathy, a brain disorder

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caused by HTLV-III in AIDS patients that results in irreversible brain damage, they said.

Furthermore, the drug can be prescribed orally, the scientists said.

To date, all but one of the 19 patients are still alive.

In terms of toxicities, 9 of the 19 patients complained of slight headaches, 1 of mild stomach discomfort, and several patients at higher dosages had bone marrow toxicities, Dr. Broder said. At high doses, it is likely that bone marrow suppression will be a limiting factor for the drug.

Scientists began treating the 19 AIDS patients in July 1985. Eleven of the patients were treated at NIH, while the remaining eight were treated at the Duke University Medical Center. The study was a collaborative effort between NCI, Duke, and Wellcome Research Laboratories, and investigators at the University of Miami also played a role.

In February 1985 AZT was shown to have activity against HTLV-III in laboratory studies by NCI scientists Drs. Hiroaki Mitsuya and Broder. Prior to that, AZT was found to have activity in an important animal virus screening program by Wellcome Research Laboratories.

Acquired immune deficiency syndrome (AIDS) is caused by a retrovirus named HTLV-III, proven by Dr. Robert Gallo and his coworkers at the NCI to be the cause of the disease.

Retroviruses, including HTLV-III, require an enzyme, reverse transcriptase for RNA-dependent DNA polymerase, which enables genetic information to insert itself into the genetic information of the cell it infects.

Drs. Mitsuya and Broder, in collaboration with scientists at Wellcome, published laboratory findings showing that AZT inhibits the replication of HTLV-III, most likely by interfering with reverse transcriptase (*Proceedings of the National Academy of Sciences*, October 1985). In other laboratory studies at NCI, AZT reduced the ability of several animal viruses to replicate *in vitro* (lab) and *in vivo* (body).

To date, AZT does not appear to have antiviral activity against most viruses other than retroviruses, although the compound has shown antibacterial activity against certain gram negative bacteria.

The experimental drug is manufactured by the Burroughs Wellcome Company of Research Triangle Park, N.C.

The next phase of drug testing will begin later this month at nine medical centers throughout the country. This will involve a randomized placebo-controlled trial of the

Grants for EB Study Awarded by NIADDK

NIADDK has awarded nine new grants to investigate epidermolysis bullosa or "EB."

EB is a rare, hereditary, blistering disorder that involves the skin and mucous membranes. As many as 50,000 Americans, mostly children, are affected by EB. The disorder can range from a relatively mild condition to a severely disabling and sometimes fatal disease in which blisters form over nearly all the body and in the digestive tract.

These new research grants, which have received a total of \$750,000 for this year, will investigate the basic underlying mechanisms that lead to this distressing and disabling disease.

For example, researchers at the University of California at Torrance, the Harvard Medical School, the University of Alabama, the Oregon Health Sciences University, and the Shriners Hospital for Crippled Children in Portland are studying the basic science of the skin basement membrane zone, the region between the epidermal and dermal layers.

Scientists at the Rockefeller University and the University of Alabama are using highly specific monoclonal antibodies as research tools to identify components of the skin. Studies at the University of North Carolina at Chapel Hill are focused on characterization and isolation of a basement membrane zone molecule involved in acquired EB and of its possible significance in inherited forms of EB. In addition to these studies, the University of Vermont is planning a conference on the nondermatologic complications of EB.

According to Dr. Lawrence E. Shulman, director, Division of Arthritis, Musculoskeletal and Skin Diseases, NIADDK, "Research and advancement in treating and identifying the causes of EB are expected to benefit all those suffering from this grave skin disorder."—Barbara A. Weldon □

drug. AIDS patients interested in treatment may have their physicians contact the Medical Department of Burroughs Wellcome at 919-248-3000.

Coauthoring the paper with Drs. Yarchoan and Broder were: Drs. Raymond W. Klecker, Phillip D. Markham, Edward Gelmann, Gene M. Shearer, Hiroaki Mitsuya, Robert C. Gallo, Jerry M. Collins, and Charles E. Myers of NCI; Kent J. Weinhold, H. Kim Lysterly, David T. Burack, and Dani P. Bolognesi of Duke; Margaret A. Fischl of the University of Miami, Fla.; and Sandra Nusinoff Lehrman, Robert M. Blum, and David W. Barry of Wellcome Research Laboratories. □

Stamp Out Those Punch Cards! Sheldon Fishman Has!

Sheldon Fishman, Office of Program Planning and Evaluation, Office of the Director, NIH, was honored on Feb. 13 as the first member of a new honorary society, the Ancient and ASCII Order of the Punch Card. The society is being established to recognize those individuals who have contributed exceptionally to the advancement of automation at NIH.



Dr. Thomas Marciniak (l) congratulates Sheldon Fishman (r) on his induction as first member into the Ancient and ASCII Order of the Punch Card.

Mr. Fishman was honored for his exemplary efforts as chairman of the PC Database Management Working Group. That group is one of a number of working groups sponsored by the Personal Workstation Office of the NIH Division of Computer Research and Technology to promote the effective use of personal computers at NIH.

Dr. Thomas Marciniak of the National Cancer Institute's Division of Cancer Prevention and Control (DCPC) presented the initial award. Dr. Marciniak said "DCPC seems appropriate for initiating such a society, since most of our division is located in the Blair Bldg. in Silver Spring, which gives us a rather telescopic view of NIH activities."

Other nominations for society membership are solicited to honor those individuals who have helped to stamp out a punch card approach to computing at NIH in the spirit of the society's motto, "The punch card stops here." □

There is nobody so irritating as somebody with less intelligence and more sense than we have.—Don Herold