DEPARTMENTS OF LABOR, HEALTH AND HUMAN SERVICES, EDUCATION, AND RELATED AGENCIES APPROPRIATIONS FOR 1999

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTH CONGRESS

SECOND SESSION

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NATIONAL INSTITUTES OF HEALTH

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WEDNESDAY, MARCH 11, 1998.

NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS

WITNESSES

DR. JAMES F. BATTEY, DIRECTOR, NIDCD
DR. DONALD H. LUECKE, DEPUTY DIRECTOR
WILLIAM DAVID KERR, EXECUTIVE OFFICER
PATIENCE T. SPARKS, BUDGET OFFICER
DURWOOD O'QUINN, INTERPRETER, NIDCD
DR. HAROLD VARMUS, DIRECTOR, NIH
DENNIS P. WILLIAMS, DEPUTY ASSISTANT SECRETARY, BUDGET, DHHS

Mr. PORTER. We are pleased to welcome the new Director of the National Institute on Deafness and Other Communication Disorders, Dr. James F. Battey. This is his first appearance before the subcommittee. Dr. Battey, we are delighted to see you. Would you introduce the people who are with you and then proceed with your statement, please?

INTRODUCTION OF WITNESSES

Dr. BATTEY. Thank you very much, Mr. Porter.

It is indeed a pleasure to be here and have an opportunity to present our research to the subcommittee. On my far left is Ms. Patience Sparks, who is our budget officer of the NIDCD; Mr. David Kerr, who is our Executive Officer; Dr. Donald Luecke, who is the Deputy Director of NIDCD. And of course you know Dr. Varmus and Mr. Williams on my right.

I am really honored to have an opportunity to appear before you today as the newly appointed Director of the National Institute on Deafness and Other Communication Disorders.

OPENING STATEMENT

And I am pleased to be able to present the President's budget request for the NIDCD for fiscal year 1999 representing the sum of $213.8 million dollars which is an increase of roughly $15 million above the FY 1998 appropriation.

Communication skills will be central to a successful and fulfilling life in the new century for all Americans. For the 46 million Americans with communication disabilities, however, facing each day can be a challenge. The simple acts of speaking, listening or making their wants and needs known are often impossible for these individuals.

For those who cannot speak without stuttering, or for those who are unable to express ideas clearly after suffering a stroke, or those who cannot use their voices to talk with a friend on the phone due

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to a voice disorder, or the devastation of throat cancer, each day poses a challenge.

Similar challenges are faced by children who have autism and consequent language disabilities, as well as for their families who must care for these children. For an older person, loss of their sense of balance can result in falls and fractured bones, and a loss of hearing can result in isolation.

For the young child who begins a struggle with language acquisition that without proper intervention will be a lifelong struggle, communication disabilities pose a constant challenge.

The NIDCD has made important progress in understanding and helping to develop better treatments for these disorders of human communication this year, and we have identified new targets, new tools and new teams to accelerate discovery in fiscal year 1999.

For example, we now are using the advanced neuroimaging tools to image the brain at work during normal and disordered human communication. These studies have taught us that much of the brain is used for hearing, balance, voice and speech, and the manipulation and production of language, as well as the ability to smell and taste.

Having the ability to image brain activity patterns during various communication events or disorders such as stuttering, or aphasia, or ringing in the ear or tinnitus, or imaging the use of Americans using American sign language is revolutionizing our understanding of normal and disordered processes of human communication.

In one of many remarkable advances this year, NIDCD scientists have been able to visualize brain activity that is correlated with tinnitus or ringing in the ear.

In another remarkable study, an intramural investigator showed that individuals who stutter have a completely different brain activity pattern associated with speech production whether or not they are fluent or dysfluent.

NIDCD supported scientists are determining the properties of remarkable and unique sensory cells of the inner ears that we call hair cells that are shown on the electron micrograph to my left. And I think it you look at the cell, which is really very unique, you can understand why biological scientists call it a hair cell.

It is that hairy structure or cluster of sterocilias that is absolutely critical for auditory signal transduction. When the tips of those stereocilia get deflected, that results in an electrical stimulation of the cell which sends the electrical information into the brain, and that is in fact how we hear and how we maintain balance.

Very often, it is the loss of these unique hair cells in the inner ear that lead to hearing impairment and balance disorders. And our scientists are working hard to try to understand what the molecular mechanisms might be that would allow these cells to regenerate.

We know that in birds, these cells can regenerate. And within the last year, even in some mammals, scientists have been able to effect regeneration of hair cells after they have been damaged. And we think this is a very exciting new area of research.