news THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS
southwestern medical school ▪ graduate school of biomedical sciences ▪ school of allied health sciences

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******Scientists who discovered genetic defect responsible for a form of high blood cholesterol will be first Americans to receive international award.*

DALLAS--Two scientists at The University of Texas Health Science Center here will become the first Americans to win a prestigious international award to be presented Nov. 8 in Munich, Germany.

Dr. Joseph L. Goldstein and Dr. Michael S. Brown will receive the Heinrich Weiland Prize, an award given annually for outstanding work in lipid (fat) metabolism. The prize, which includes 15,000 German marks, is named for an outstanding biochemist and Nobel laureate.

Drs. Goldstein and Brown are being recognized for their discovery of the biochemical genetic defect responsible for Familial Hypercholesterolemia. This inherited defect causes one out of every 500 Americans to have high levels of cholesterol in their blood.

The finding is being hailed as one of the most significant in this field in years in that it opens up new pathways for experimentation on the role of cholesterol in heart attacks and a class of heritable disorders arising from dominant genes.

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Dr. Goldstein began work in this area while at the University of Washington School of Medicine. He studied 500 survivors and their families from a group of 1,166 persons who had had heart attacks. It was found that 31 per cent of the survivors had high levels of fat in their blood--either cholesterol or triglycerides or both and that 20 per cent of these persons apparently suffered genetic defects, one of which was Familial Hypercholesterolemia.

In 1972, Drs. Brown and Goldstein began a series of experiments with human cells in tissue culture at UT Southwestern Medical School. The results of these studies have been published in a number of recent scientific papers. The researchers found that cells from patients with Familial Hypercholesterolemia contained a faulty gene that failed to supply the cells with a particular kind of receptor on its outer membrane surface. Without this receptor, the cells could not form bonds with low-density lipoproteins and thus failed to inhibit the synthesis of 3-hydroxy-3-methylglutaryl coenzyme A reductase (HMG CoA reductase), an enzyme which controls the production of cholesterol. Without this delicate system of control, production of cholesterol in the cell is largely ungoverned.

Currently, Drs. Goldstein and Brown have grants from the National Institutes of Health, the American Heart Association and the National Foundation to study possibilities of controlling cholesterol synthesis.

Dr. Goldstein currently is an associate professor of medicine and head of the Division of Medical Genetics at the UT Southwestern Medical School. He is a 1966 graduate of that school and winner of its highest award--the Ho Din. He did his internship and residency in Medicine at Massachusetts General Hospital and received his research training at the National Institutes of Health and the University of Washington.

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Dr. Brown graduated from the University of Pennsylvania School of Medicine in 1966, where he was awarded the David L. Drabkin Prize in Biochemistry and the Fredrick L. Packard Prize in Internal Medicine. After internship and residency in medicine at the Massachusetts General Hospital, he did research at the National Institutes of Health. He joined the Department of Internal Medicine at Southwestern in 1971 and now is an associate professor.

Previous winners of the Weiland Prize include four from Germany and one each from Holland and Japan.

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