SOUTHWESTERN NEWS

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UT SOUTHWESTERN RECEIVES $5 MILLION SPACE CENTER GRANT

DALLAS--A grant for approximately $5 million for space medicine research has been awarded to The University of Texas Southwestern Medical Center at Dallas, NASA officials announced today.

The grant will establish NASA's only specialized research and training center in physiology. While most research will be conducted on the UT Southwestern campus, one of the center's five research components will be based at the Institute for Exercise and Environmental Medicine, a collaborative effort of UT Southwestern and Presbyterian Hospital of Dallas.

The five-year study will examine the physiological mechanisms that enable living organisms to adjust to changing demands imposed by the environment. The findings should help us understand the effects of reduced gravity on the heart, lungs, bones and muscles, said principal investigator Dr. Gunnar Blomqvist, professor of internal medicine and director of UT Southwestern's space research laboratory.

"The central theme for the research will be disuse atrophy as it occurs in microgravity and affects the musculoskeletal and cardiovascular systems, their interactions and their regulatory mechanisms," Blomqvist said. "We will be looking at these mechanisms all the way from the molecular and cellular level to the whole body."

Blomqvist, a cardiologist and pioneer in cardiovascular space research, said the new center's research is focused on understanding the physiological mechanisms of organ systems but could lead to

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better treatments for patients confined to bed for long periods of time and those with certain bone, muscle and nervous system diseases. It also could help keep astronauts healthy during long stays in space, he said.

The new center's research will have five components. One will focus on the molecular and cellular responses to increased and decreased skeletal muscle activity.

Three research components will examine specific effects of the lowered gravity in space and changes in activity levels on the ground on bones and mineral metabolism (the way the body uses calcium and other essential minerals), as well as on muscles, heart and blood vessels.

An important part of those research efforts will be based at the new Institute for Exercise and Environmental Medicine, a collaborative effort of UT Southwestern and Presbyterian Hospital of Dallas headed by Dr. Benjamin D. Levine, assistant professor of internal medicine at UT Southwestern and medical director of the institute. His associates include Dr. Peter B. Raven, associate director of the newly funded NASA space physiology research center and director of its training program, and Dr. James A. Pawelczyk, assistant professor of internal medicine at UT Southwestern.

A fifth component, which will use no new funds, incorporates Southwestern's ongoing space flight experiments. It will be directed by Blomqvist.

The center also will offer training ranging from a summer program to identify and recruit outstanding minority students for careers in science to the training of postgraduate fellows.

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Blomqvist is a professor of internal medicine and physiology at UT Southwestern. He has been studying the cardiovascular system's response to changes in environment for 30 years in the laboratory and 12 years on space flight projects.

In 1990 he was principal investigator for UT Southwestern research aboard Spacelab Life Sciences-1 (SLS-1). Dr. Drew Gaffney, then a UT Southwestern faculty member, was one of the payload specialists aboard SLS-1.

Blomqvist also is principal investigator for a major U.S. experiment aboard Deutsche-2 (D-2), an international manned scientific research flight scheduled to launch in mid-March, and on Spacelab Life Sciences-2, an American mission dedicated to life-sciences research is scheduled for late August 1993.

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, Southwestern Allied Health Sciences School, affiliated teaching hospitals and outpatient clinics.

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