

# NEWS

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\*\*\*UT researcher selected to fly  
on Space Lab 4 shuttle mission.

DALLAS -- Come January 1986, Drew Gaffney, M.D. will move into a new lab with a spectacular view -- the Space Lab orbiting 160 miles above the earth. Gaffney has been selected to be a payload specialist on an upcoming NASA Space Shuttle mission.

Francis Andrew Gaffney (he prefers Drew), assistant professor of Internal Medicine at The University of Texas Health Science Center at Dallas, learned Jan. 5 that he was one of four scientists to be chosen for the space program. Gaffney is slated to be a crew member on the Space Lab 4 shuttle mission.

For Gaffney, his selection to be on a shuttle mission is the fulfillment of a second life-long dream. "As a kid my career choices were to be a doctor or a pilot. They're totally unrelated. I don't know why I chose them." He pursued medicine after a family doctor mistakenly said Gaffney's eyesight was too poor to qualify for the Air Force Academy.

Adaptation of the heart and lungs to the weightless condition of space has been a particular research interest of Gaffney's. He received his M.D. degree from the University of New Mexico, Albuquerque, in 1972. After completing his internship and residency at Cleveland Metropolitan General Hospital, Gaffney accepted a cardiology fellowship at UTHSCD in 1975.

Gaffney joined the health science center's faculty in 1977. Since then, he and his colleagues have published 31 research papers, many related to the physiological impact of space flight on the human body.

While Gaffney conducted his research, the 37-year-old physician pursued his other fantasy -- flight. He earned his private pilot's license in 1977 and received his commercial pilot's rating in 1982.

Gaffney modestly downplays his selection as part of the U.S. space program. "I was in the right place at the right time. They have designed the shuttle and the space lab so that ideally they could take a man off the street, teach him how to get out of it in an emergency, how to run the toilet and kitchen and then have him fly in it. That's the goal, to make space accessible."

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As a payload specialist, Gaffney will be part of the shuttle's crew of six. During the scheduled seven-day flight, Gaffney's primary responsibility will be to conduct a series of more than 20 scientific experiments encompassing human physiology, animal physiology and even plant adaptation. All of the experiments are specifically designed to take advantage of the unique zero-gravity environment offered by the shuttle. The human studies cover a wide range of interests including: how the heart and circulatory system adjust to zero-gravity and then readapt following return to earth; how the muscles and skeletal system adapt to space; hormonal changes; kidney adaptation in a weightless environment and the phenomenon of space sickness, a particular type of motion sickness that vexes some astronauts but has no effect on others.

The problem of space adaptation is being extensively studied at the health science center. Under the direction of Dr. Gunnar Blomqvist, Gaffney and colleagues are preparing experiments for future shuttle missions that will measure fluid shift, calcium loss and cardiovascular changes due to weightlessness.

In future space stations personnel may spend months in a zero gravity environment. But we still do not know what changes weightlessness causes in the body, particularly to the heart and circulatory system. The Space Lab 4 experiment, designed by Blomqvist, will attempt to provide some answers.

The information learned from the shuttle experiments may help not only future space explorers but earth-bound humans as well. Blomqvist says, "What happens in space is that you get a redistribution of body fluids, including blood, from the lower half into the upper half of the body. The fluid shift increases blood volume and pressure in the heart for a brief period. In a sense it resembles a mild heart failure and gives us important insights into cardiovascular functions."

Gaffney will be the second space bound physician associated with the health science center. Dr. Norman Thagard was a crew member of the seventh space shuttle mission, in June 1983. Thagard received his M.D. from UTHSCD's Southwestern Medical School in 1977. Following a year's internship, Thagard joined NASA as a career astronaut.

What can Gaffney look forward to on his space mission? Thagard recalls, "It was really something else. I turned myself upside down, and was looking down at the earth. It was like being in the gondola of a dirigible looking at the world go by, only this dirigible was 160 miles up in the sky. It was great."

Gaffney applied to be part of the shuttle program in May 1983. An elated Gaffney received a phone call the evening of Jan. 5 from mission project manager John Rummel, Ph.D., notifying him of his selection. "Fantastic!" Gaffney told Rummel. "Thank you. I'm looking forward to it. I think it's really exciting."

Gaffney says the two-year training program is flexible enough to allow his continued work at the health science center. Interspersed with his Space Lab activities, Gaffney will teach, see patients and conduct research here.

Gaffney says, "The whole thing is exciting to me. Every bit of it. We're going to take a couple of years, visiting the best labs in the country, working one-on-one with the heads of those labs. It is an incredible opportunity to become a renaissance person. And then after you have gotten to do that, you get to go fly in a spaceship. I could not have set things up any better than that. I'm very pleased. It's a really nice feeling."

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