

# The University of Texas Southwestern Medical Center



ENDOWMENT PROFILE

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## The Annette G. Strauss Center for Neuro-Oncology

SEEKING MORE effective treatments for malignant brain tumors, The University of Texas Southwestern Medical Center founded the Annette G. Strauss Center for Neuro-Oncology more than a decade ago.

By integrating laboratory investigators and surgeons in clinical settings and operating rooms, the Strauss Center's multidisciplinary brain tumor program is developing a model for translational research that could turn theories into clinical therapies more quickly and efficiently.

Translational research is about uncovering biomedical discoveries in the lab and then determining if they are applicable to patients. The problem is the process can take years and cost millions of dollars.

At the Strauss Center, however, scientists and physicians collaborate from both ends of the translational spectrum. They identify the key questions raised by individual patients' brain tumors, known as gliomas, and search for answers in the lab in a continuous effort to develop personalized treatments.

"The goal of everything in the Annette Strauss Center is to find things we can do that will be translatable to the patient," said Dr. Bruce Mickey, director of the center, vice chairman of neurological surgery and holder of the William Kemp Clark Chair in Neurological Surgery. "This is about learning as we go — a continuous process that is leading to progress."

Having a clinical care center for people of all ages with brain cancer backed by a dedicated laboratory research effort has long been the vision of UT Southwestern leaders. A generous donation from the Strauss family in memory of their remarkable matriarch helped make it possible.

Mrs. Strauss — who died in 1998 at age 74, several months after surgery to remove a malignant brain tumor — is best known as the first elected female mayor of Dallas, a position she held from 1987 to 1991. The center that bears her name, however, is just one example of her enduring spirit of philanthropy and fundraising prowess; Mrs. Strauss personally raised more than \$20 million for citywide projects during her storied career.

Shortly after Mrs. Strauss' death, her family established the Strauss Center, designating UT Southwestern's neuro-oncology program as a beneficiary of memorial gifts made in her honor.

The family's generosity continues to benefit patients at UT Southwestern. In one ongoing clinical trial, scientists are taking samples of brain tumors from patients and are growing them in mice to ascertain how the cancer progresses and to determine what treatments are most effective. The tumors also are examined in subsequent generations of mice.

This approach both speeds up the testing process and reduces costs and leads to personalized therapy regimens for patients.



Dr. Bruce Mickey, Dr. Elizabeth Maher, and Dr. Robert Bachoo

"You can test treatments in a real game-time situation and not in a Petri dish," said Dr. Robert Bachoo, assistant professor of neurology. "What works in a Petri dish doesn't translate very well to the human. This study is quicker, cheaper and it more accurately reproduces the real situation."

In another Strauss Center initiative, researchers are studying how tumor cells can migrate through the brain through incredibly narrow pathways. To do so, UT Southwestern scientists have enlisted the help of engineers from UT Arlington to create tiny channels that are microns wide, mimicking the space that cancer cells have to negotiate. It is hoped that the ability to observe this migration process in the lab will help scientists determine ways to stop the spread of cancer through the brain.

A third project teams translational scientists in the Strauss

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Center with a physicist in the medical center's Advanced Imaging Research Center, who together discovered that a protein found in high levels in gliomas is detectable by MRI. The protein, called 2-hydroxyglutarate (2HG), is now a biomarker that allows patients to be diagnosed noninvasively and assists surgeons in making diagnoses and prognoses.

"This is an incredibly valuable clinical biomarker," said Dr. Elizabeth Maher, associate professor of internal medicine and of neurology and neurotherapeutics who holds the Theodore H. Strauss Professorship in Neuro-Oncology. "The key to the whole program is having the patient at the center of it all."

This innovative project is another example of how the Strauss Center is incubating new approaches to improve the lives of brain tumor patients.

"Thanks to the collaborative effort of a large number of physicians and scientists, catalyzed by the administrative and financial efforts of the Strauss Center, UT Southwestern has made a significant contribution in the fight against brain tumors," Dr. Mickey said.