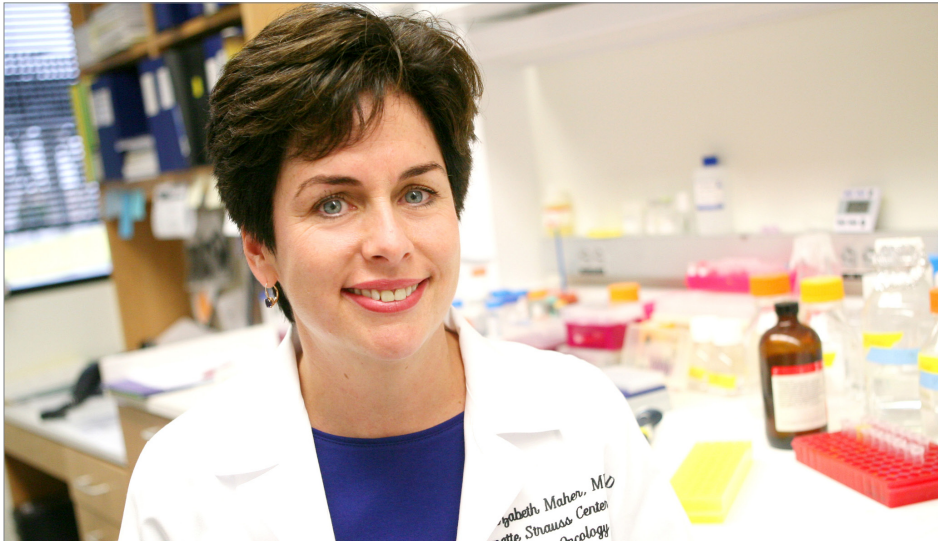


Cancer Center BULLETIN

A PUBLICATION OF THE HAROLD C. SIMMONS COMPREHENSIVE CANCER CENTER

Dr. Elizabeth Maher | Associate Professor of Internal Medicine and Neurology



GRANTS FUND COLLABORATIVE EFFORTS IN BRAIN-IMAGING CANCER RESEARCH

Physicians and scientists at UT Southwestern Medical Center recently were awarded more than \$2.3 million in grants for clinical and translational studies using imaging advances to identify the critical metabolic pathways that fuel unregulated tumor-cell growth in the brain.

The studies are driven largely by a collaborative spirit across multiple disciplines and centers throughout campus, including the Simmons Cancer Center, the Advanced Imaging Research Center (AIRC) and the Annette G. Strauss Center in Neuro-Oncology, said Dr. James Willson, director of the Simmons Cancer Center.

This dedicated group of physicians and researchers are pooling their expertise to conduct projects funded

by state and federal grants, building upon and complementing the overall study of gliomas and glioblastomas.

As is common in most cancers, glioblastoma cells use glucose at a much higher rate than normal cells, fueling the growth of the cancer cell. To get a clearer picture of what's happening in these cells, several clinical and basic studies are being developed that focus on metabolism.

Dr. Elizabeth Maher, associate professor of internal medicine and neurology at UT Southwestern and a member of the Simmons Cancer Center, received a \$1 million National Institutes of Health Challenge Grant in Health and Science Research. The grant was awarded as part of the American Recovery and Reinvestment Act.

GRAND ROUNDS

The speaker for the upcoming Simmons Cancer Center Grand Rounds is Dr. Mark Pegram, professor of medicine, associate director of clinical research and interim division chief of hematology/oncology at the University of Miami's Sylvester Comprehensive Cancer Center.

Dr. Pegram is a pioneer in targeted cancer therapeutics and is the program co-leader for the Breast Cancer Program at the UM/Sylvester Comprehensive Cancer Center. His research focuses on understanding the molecular pathways that regulate how HER-2 signals cell growth.

The lecture will be held Aug. 6 from 11:30 a.m. to 12:30 p.m. in the Medical Education and Conference Center in the T. Boone Pickens Biomedical Building (NG 3.112).

Dr. Pegram was a co-investigator on the landmark research and clinical trials that led to the development of Herceptin, the first FDA-approved targeted therapy for use in early stage HER-2 positive breast cancers. Nearly 20 percent of women with breast cancer have these types of tumors with higher tendency for fast growth and higher recurrence rate, as compared to tumors that do not overproduce HER-2. Dr. Pegram's main research interests are finding new ways to tackle this pathway and the development of new drugs to block it. ❖

LEARNING COMMUNITY DAY AWARDS OF EXCELLENCE

Students in UT Southwestern's three degree-granting institutions participated in a campuswide event in April focusing on a common "science of medicine" theme: cancer.

The Learning Community Day, sponsored in part by the Simmons Cancer Center, was designed to increase students' knowledge and understanding of cancer, cancer research and cancer patient care.

Graduate, medical and health professions students participated in small-group discussions of a cancer research study, under the guidance of faculty mentors. The event also featured student poster presentations and lectures highlighting translational medicine.

The poster winners in the short-term project division each received a \$75 gift certificate to Majors Books, and the winners for long-term project posters received \$500 travel awards. The winners are:

SHORT TERM PROJECTS

Students:

Wendy Bishop

Mentor: Dr. Celette Sugg Skinner

Title: "Characteristics of minorities agreeing to be contacted for future research studies"

Maithili Dalvi

Mentor: Dr. John Minna

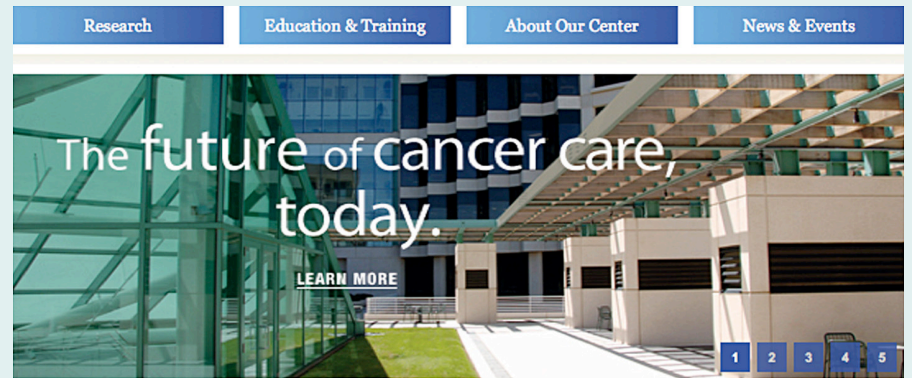
Title: "Identification of squamous cell carcinoma (SCC)-specific molecular changes leading to the genesis of SCC"

Tom Ju

Mentor: Dr. Andres Roig

Title: "A technique to culture long-term adult intestinal epithelia for more accurate study of intestinal diseases such as colon cancer progression"

THE FUTURE OF CANCER CARE, ONLINE



The Simmons Cancer Center website has a new look. The site features patient stories, faculty profiles and the latest news for patients, physicians and researchers. <http://www.utsouthwestern.edu/simmons-cancer-center>

Postgraduate:

Dr. Christina Roland

Mentor: Dr. John Mansour

Title: "Timing to delivery of treatment is not a reliable measure of quality of care for patients with colorectal adenocarcinoma"

Dr. Ramy Yaacoub

Mentor: Dr. Yair Lotan

Title: "Role of fluorescence in situ hybridization in bladder cancer surveillance of patients with negative cytology"

Dr. Jeffrey Yorio

Mentor: Dr. David Gerber

Title: "Treatment selection and outcomes in non-small cell lung cancer (NSCLC)"

LONG TERM PROJECTS

Students:

Tracy Chow

Mentor: Dr. Woody Wright

Title: "Manipulating mammalian telomere end processing to improve telomerase-based cancer therapies"

Joanie Neumann

Mentor: Dr. James Amatruda

Title: "A mutation in *alk6b* causes impaired differentiation and leads to germ cell tumors in zebrafish"

Jason Stafford

Mentor: Dr. Phil Thorpe

Title: "New imaging agents for homing rapidly to tumors"

Postdoctoral/Clinical fellows:

Dr. Puja Gupta

Mentor: Dr. Rolf Brekken

Title: "Targeting PDGFGa on tumor and stromal cells in non-small cell lung cancer (NSCLC)"

Dr. Sang Kim

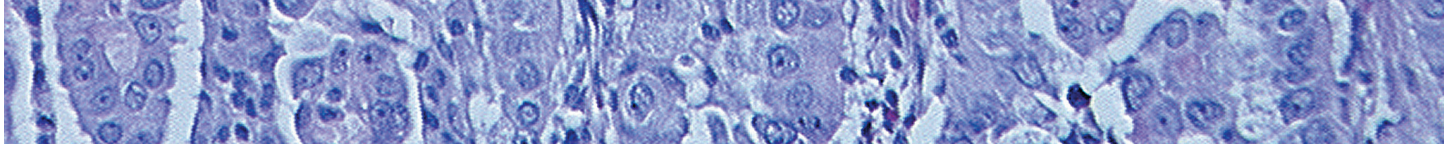
Mentor: Dr. Jerry Shay

Title: "Bardoxolone methyl (BARD) is both a countermeasure that protects against radiation-induced neoplastic transformation of normal human epithelial cells and a mitigator of radiation damage"

Dr. Tram Tran

Mentor: Dr. James Brugarolas

Title: "PVR suppression of cell proliferation due to apoptosis in *Drosophila*" ❖



GRANTS

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“The overarching goal of our studies is to quickly identify new therapeutic targets based on glucose metabolism in glioblastoma cells,” said Dr. Maher.

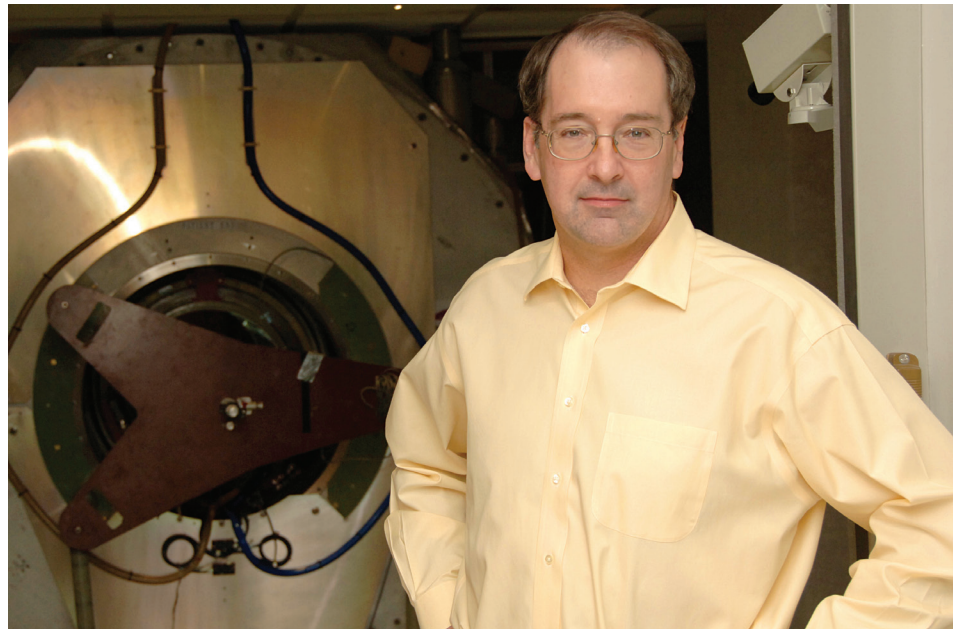
In one of her studies, Dr. Maher collaborates with researchers who image patients with gliomas using UT Southwestern’s powerful 7 Tesla human MRI scanner. The device – the only MRI system of its kind in Texas – provides the clearest images available of cellular function.



Dr. Ralph DeBerardinis

In another study, researchers infuse glucose tagged with a nonradioactive carbon tracer into patients with gliomas before surgery. The glucose is taken up by the tumor and is processed as part of normal metabolism. Once the growth is surgically removed, it is taken to the AIRC where researchers will map that tumor’s metabolic pathways and correlate them with the preoperative imaging.

Dr. Maher also is working with Dr. Ralph DeBerardinis, assistant professor of pediatrics and a member



Dr. Craig Malloy

of the Simmons Cancer Center, to design studies in cell culture that might illuminate specific metabolic activities that differentiate tumors from regular tissue.

Dr. DeBerardinis also is examining whether glioblastoma growth can be suppressed by targeting metabolism of the amino acid glutamine. He received a \$200,000 grant from the Cancer Prevention and Research Institute of Texas (CPRIT) to test this hypothesis. Dr. DeBerardinis has identified a new metabolic pathway in which glutamine becomes critical for the growth of glioblastoma cells in culture.

“If we could find metabolic properties that differentiate the cancer cell from the normal cells, then we might be able to image those activities, or develop ways to block them to slow down or eliminate the growth of the tumor,” Dr. DeBerardinis said.

The ability to conduct these metabolic studies is possible because the AIRC has an active

research program in metabolic imaging and spectroscopy of cancer, centered around the 7 Tesla human MRI scanner. Progress is limited, however, by commercially available radiofrequency coil technology.

To narrow this gap, Dr. Craig Malloy, medical director of the AIRC and professor of internal medicine and radiology, received a \$1.2 million grant from CPRIT to improve imaging technology.

Dr. Malloy has established a partnership between clinicians at UT Southwestern and engineers at Texas A&M University to develop state-of-the-art radiofrequency coils and multitransmit technology for the 7 Tesla.

“The combined effort will allow unprecedented improvements in the use of MRI and spectroscopy to identify specific metabolic biomarkers in breast cancer and malignancies of the brain,” Dr. Malloy said. ❖