UT Southwestern Medical Center

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Cancer CONNECTION

A PUBLICATION OF THE HAROLD C. SIMMONS COMPREHENSIVE CANCER CENTER, AN NCI-DESIGNATED CANCER CENTER

FROM THE DIRECTOR

Dr. James Willson

When the Harold C. Simmons Comprehensive Cancer Center Fort Worth opened on May 4, we extended our services to cancer patients across the western half of North Texas, a population of 1.7 million across 11 counties.

This initiative is the latest step in an ongoing expansion that reflects five years of development since our National Cancer Institute designation in 2010.

Our focus on patient needs has led us to develop innovative private infusion rooms at the Simmons Cancer Center Fort Worth; specialized high-tech inpatient rooms at William P. Clements Jr. University Hospital; secure telemedicine videoconferencing links at both locations; and an entire new hospital floor devoted to oncology, featuring a bone marrow transplant unit that meets the strictest requirements for air purity.

Patient visits have increased from 56,633 in 2009 to a projected 129,429 this year. Simmons now encompasses 207,283 square feet, and will begin further renovations this summer at our Dallas campus to add more than 20 exam rooms, additional infusion rooms, and an expanded pharmacy.

Simmons' outstanding clinicians and staff offer a wealth of knowledge, experience, and

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PLANNING THE NEXT QUANTUM LEAP FORWARD IN CANCER CARE

Researchers at UT Southwestern Medical Center are leading a Texas consortium that could establish the first U.S. center for Heavy Ion Radiation Therapy. During a competitive process, their team was one of just two nationwide that received a $1 million planning grant from the National Cancer Institute.

"UT Southwestern is committed to being a national leader in developing new technologies that will improve patient outcomes through the nexus of research and clinical care," said Dr. Daniel K. Podolsky, President of UT Southwestern.

"I commend the National Cancer Institute for their generous support of UT Southwestern and its development of this groundbreaking program," Texas Gov. Greg Abbott said. "Support from partners like NCI will ensure that Texas universities are at the forefront of research and innovation, and becoming home to the first Heavy Ion Radiation Therapy Research Center in the United States is a No. 1 ranking Texas could be truly proud of."

Dr. Hak Choy, Chair of Radiation Oncology at UT Southwestern, is principal investigator for the Texas award.

"This is the ultimate radiation tool for the cancer patient. The efficacy of Heavy Ion Radiation Therapy for certain cancers has already been established by foreign institutions, which have conducted clinical trials and found profound increases in overall disease-free survival. However, this therapy needs a more thorough and rigorous scientific approach to uncover its full potential," Dr. Choy said. In the U.S., more than 50 percent of cancer patients are currently treated using energetic photons, electrons, or protons. "Heavy Ion Radiation, on the other hand, delivers therapy that is both more potent and more precise than conventional as well as proton therapy," Dr. Choy said.

The U.S. pioneered Heavy Ion Radiation Therapy at the Lawrence Berkeley

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Research News

DISCOVERING WAYS TO DERAIL CANCER GROWTH

Two new approaches to brain cancer treatment have cast light on better ways to treat this difficult disease which may apply to other cancers as well.

RESETTING THE SIGNAL

UT Southwestern neurology researchers have identified a cell signaling mechanism that plays an important role in brain cancer and may provide a new therapeutic target.

Researchers found that this mechanism — a type of signaling termed constitutive or non-canonical epidermal growth factor receptor (EGFR) signaling — is highly active in glioblastomas, the most common type of adult brain cancer and a devastating disease with a poor prognosis.

When activated in cancer cells, it protects the tumor cells, making them more resistant to chemotherapy treatment. The pathway may also have implications for other types of lung and breast cancers where overexpression of EGFR is a factor.

"Abnormal EGFR signaling, a common and key feature of human cancer is of considerable interest both for a role in the growth of malignant cells and as a target for treatment," said Dr. Amyn A. Habib, Associate Professor of Neurology and Neurotherapeutics at UT Southwestern and member of the Harold C. Simmons Comprehensive Cancer Center.

Glioblastomas represent about 17 percent of brain tumors, and are more common in males and those over 50. Fueled by a good blood supply, they grow rapidly. Average survival is just 15 months after diagnosis.

The research, which appears in *Nature Communications*, was supported by the National Institutes of Health, Department of Veterans Affairs, the William and Sylvia Zale Foundation, and the Ethel Silvergold Philanthropic Fund of the Dallas Jewish Community Foundation, and by donations from Barbara F. Glick.

CUTTING THE FUEL SUPPLY

For more than 75 years, researchers have known that cancer cells use glucose as the major fuel, but efforts to halt cancer growth by controlling glucose levels in the brain have been unsuccessful. "We identified that glucose wasn't the only fuel being burned," said senior author Dr. Robert Bachoo, Assistant Professor of Neurology and Neurotherapeutics, and Internal Medicine, and a member of the Simmons Cancer Center. "Acetate can be used to generate fuel and metabolites that can then be used to make other things that the cell needs to survive and multiply."

Researchers began with specially engineered mouse models so that the tumors grown in the brain were very similar to human tumors, especially with respect to the molecular and metabolic characteristics. They infused both acetate and glucose into the mice and showed that the tumors burn acetate as fuel.

"This is the first demonstration of acetate being used by the cell in this way. The striking finding was that all cancers we studied had the same ability to burn acetate," said Dr. Elizabeth Maher, Associate Professor of Internal Medicine, and Neurology and Neurotherapeutics, and member of the Simmons Cancer Center and the Annette G. Strauss Center for Neuro-Oncology. Researchers then validated their findings in two patients with glioblastomas and two patients with brain metastases (breast and lung cancer) who were undergoing surgical resection of their tumors.

"That analysis showed that the human tumors robustly burned acetate," said Dr. Bachoo, a member of the Annette G. Strauss Center for Neuro-Oncology. "ACSS2 may thus be a therapeutic target for these very aggressive tumors that have limited therapies available."

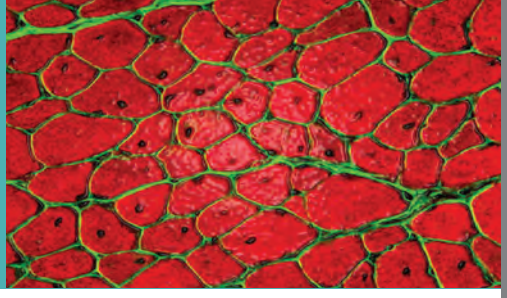
The work was supported by the Cancer Prevention Research Institute of Texas, National Institutes of Health, a Simmons Cancer Center NIH support grant and philanthropic funds from the Annette G. Strauss Center for Neuro-Oncology, the Miller Family Fund in Neuro-Oncology, the Gladie Jo Salvino Fund for Glioblastoma Research at UT Southwestern, and the Kenny Can Foundation in Dallas. ✤

Dr. Amyn A. Habib

Dr. Robert Bachoo and Dr. Elizabeth Maher

Dr. Maher holds the Theodore H. Strauss Professorship in Neuro-Oncology.
Dr. Bachoo holds the Miller Family Professorship in Neuro-Oncology.

Research News



SCREENING THE SAFETY NET POPULATION

UT Southwestern researchers are partnering with Parkland Health and Hospital System to pursue ways to improve cancer screening and follow-up through a nationwide initiative by the National Cancer Institute (NCI).

The program, titled PROSPR (Population-based Research Optimizing Screening through Personalized Regimens), is underway at seven sites across the country, of which just three are lead sites for both colon and cervical cancer. Among these, UT Southwestern/Parkland is the only site studying these issues in a safety-net setting.

Cervical and colon cancers can be detected early, and can even be prevented in some cases through HPV vaccination or by removing polyps during a colonoscopy. Colon cancer is the second most deadly cancer for both men and women, but not everyone is screened appropriately. While Pap tests have been available since the 1950s, not all women have access to them, have them regularly, or receive timely follow-up.

As part of the PROSPR network, the UT Southwestern/Parkland site is participating in national data collection that may change how and when people are screened. At the Fred Hutchinson Cancer Research Center in Seattle, de-identified data from more than 1 million patients across the U.S. are being collected for analysis to measure screening effectiveness.

"Screening alone doesn't save lives; it depends on what you find and whether the patient has the appropriate follow-up," explained Dr. Celette Sugg Skinner, Chief of the Division of Behavioral and Communications Sciences, Department of Clinical Sciences, and Associate Director for Population Research. "We are studying interventions at every level – system, clinic, provider, and patient level – to determine which are the most effective at reducing the number of invasive cancer cases, cancer mortality, and health care costs."

An estimated one in four residents of Dallas County is uninsured, which can limit their access to lifesaving preventive services like cancer screening. Parkland, whose services are needed by about 1 million adults, facilitates access to cancer screening, diagnostic, and treatment services. About three-fourths of Parkland patients are Hispanic or African-American.

Joining Dr. Skinner as principal investigators for PROSPR are Dr. Ethan Halm, Professor of Internal Medicine, and Dr. Jasmin Tiro, Assistant Professor of Clinical Sciences. "What interventions help providers recommend screening and patients complete the screening process? Safety net systems are a critical clinical setting to study this issue because their patients are at high risk," Dr. Tiro said. "Parkland diagnoses a large number of invasive cancers. Our long-term goal is to detect those early and reduce cancer disparities among minorities and the uninsured."

Dr. Jasmin Tiro, center, meets with the team of researchers that are studying cervical and colon cancer, guided by Dr. Celette Sugg Skinner and Dr. Ethan Halm.

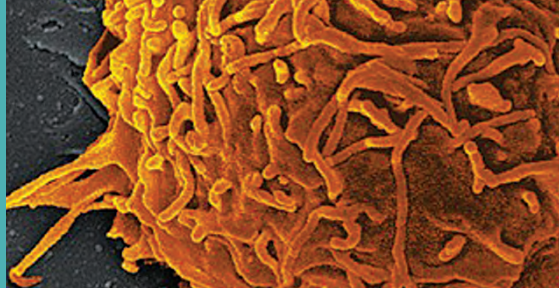
Through the PROSPR study, the team of researchers is tracking cervical cancer care delivery to 178,000 women, ages 18-64, who have had at least one primary care visit in the Parkland system during the period 2010-2015. "We must track how many had the Pap test, how many tests were abnormal, how many got appropriate and timely follow-up, and how many received treatment," Dr. Tiro explained.

The PROSPR team also is following 70,000 primary care patients during the same time period, both men and women, who were eligible for colon cancer screening by being age 50 to 64. About 6,000 in this group are part of a study to compare which is more effective – receiving a mailed invitation to come in for a colonoscopy or a FIT (fecal immunochemical test) kit to complete and mail back.

Although FIT tests must be completed every year to be effective, they take less time to complete and are significantly less expensive than colonoscopies. "It's not just the cost of the colonoscopy exam. Taking that day off work, arranging child care, and finding transportation may inhibit patients from participating," Dr. Skinner said. ✤

Dr. Skinner holds the Professorship for Parkland Community Medicine.
Dr. Halm holds the Walter Family Distinguished Chair in Internal Medicine in Honor of Albert D. Roberts, M.D.

In the Community



MOBILE CANCER SURVIVOR CLINIC DELIVERS CARE TO NINE COUNTIES

More people are surviving cancer than ever before, increasing the need for follow-up care. Even after surviving the disease, cancer survivors face a range of issues including pain, difficulties with range of motion, depression, anxiety, fatigue, poor nutrition, and muscle weakness.

A bold initiative to address these needs in rural communities has recently hit the road. The Mobile Cancer Survivor Clinic – a one-of-a-kind, $1.1 million, fully equipped 18-wheeler – is now delivering follow-up and screening services directly to cancer survivors.

"The Mobile Cancer Survivor Clinic reflects UT Southwestern's commitment to improve patient care and expand convenient access to the outstanding medical expertise available at UT Southwestern and its Moncrief Cancer Institute. We are committed to making it possible for even those who live at a distance from our facilities to benefit from the research, genetic counseling, and other services that would not otherwise be available in these communities," said Dr. Daniel K. Podolsky, President of UT Southwestern.

The 13.5-foot-high, 75-foot-long Mobile Cancer Survivor Clinic is equipped to address the challenges facing those recovering from cancer with custom-designed features that include a reception area, two private patient examination rooms, a 3-D mammography suite with dressing room, and an exercise room with a seated elliptical machine for one-on-one training sessions.

"The clinic's state-of-the-art telecommunication capability will enable UT Southwestern physicians in other locations to provide consultations for patients through secure videoconferencing technology," said Dr. Keith Argenbright, Director of UT Southwestern's Moncrief Cancer Institute in Fort Worth, Associate Professor of Clinical Sciences, and at the Harold C. Simmons Comprehensive Cancer Center. Dr. Argenbright will serve as supervising physician for the Mobile Cancer Survivor Clinic.

The traveling clinic will serve Tarrant, Parker, Wise, Hood, Erath, Somervell, Johnson, Ellis, and Navarro counties – more than 7,000 square miles – where nearly 15,000 residents are underserved cancer survivors. Fifty-five percent of the residents in this region are either fully or partially designated as medically underserved. One-third of cancer survivors in these areas are at risk of non-adherence to essential follow-up care due to lack of facilities, unreliable transportation, inexperience in accessing care, or a hesitation to seek help.

"Our collaboration brings the expertise of top physicians in the cancer field to those who have the most difficulty accessing services," said Dr. James K. Willson, Associate Dean of Oncology Programs, Director of the Simmons Cancer Center, and Professor of Internal Medicine. "Consistent follow-up and yearly cancer screenings enable the identification of new cancer diagnoses or recurrence at an earlier stage of disease, decreasing the financial burden and improving the potential for recovery and long-term survival."

Through the generosity of the William A. and Elizabeth B. Moncrief Foundation, the Moncrief Cancer Institute funds cancer screening and survivor services in Tarrant and 33 surrounding counties. ✤

The Mobile Cancer Survivor Clinic will bring screening and other services to an area where nearly 15,000 residents are underserved cancer survivors.

Clinical News

UT SOUTHWESTERN BRINGS COMPREHENSIVE CLINICAL CANCER SERVICES TO TARRANT AND SURROUNDING COUNTIES AT NEW FORT WORTH FACILITY

UT Southwestern's Harold C. Simmons Comprehensive Cancer Center is bringing world-class advances in clinical cancer care and research to residents in Tarrant and 10 surrounding counties through its new satellite facility at the Moncrief Cancer Institute in Fort Worth.

Encompassing more than 22,500 square feet, the new facility is specially designed to enhance the patient's experience with exam space, state-of-the-art imaging capabilities, onsite lab and pharmacy services, and 14 all-private infusion rooms for chemotherapy – a first for Fort Worth.

"The Harold C. Simmons Comprehensive Cancer Center Fort Worth reflects UT Southwestern's commitment to expanding access to health care by bringing the exceptional care of the region's only NCI-designated cancer center closer to home for those in Tarrant and surrounding counties," said Dr. Daniel K. Podolsky, President of UT Southwestern. "The care being made available at these new facilities is important to achieving the best possible outcomes for patients, as well as extending UT Southwestern's research and education missions. We appreciate the extraordinary, longtime commitment of the Moncrief family to Fort Worth and this region, as well as UT Southwestern."

Through secure telemedicine links directly to the Simmons Cancer Center, expert consultations and electronic medical records are extending the reach of oncologists, surgeons, and bone marrow transplant specialists at UT Southwestern's William P. Clements Jr. University Hospital and radiation oncologists at the W.A. Monty & Tex Moncrief Radiation Oncology Building.

"This exciting clinical commitment in Fort Worth is not only an important expansion of the services available at the Moncrief Cancer Institute, but also allows us to extend the full backing and advantage of the Simmons Cancer Center to the important western portions of the North Texas region that we are dedicated to serving," said Dr. James K. Willson, Associate Dean of Oncology Programs, Director of the Simmons Cancer Center, and Professor of Internal Medicine. "The evidence-based, research-backed approach to cancer of our NCI-designated center will be equally reflected in our commitment here."

W.A. (Tex) Moncrief Jr., Dr. John "Jay" Lohrey, and Dr. James K. Willson

Dr. Keith Argenbright, Fort Worth Mayor Betsy Price, W.A. (Tex) Moncrief Jr., Tarrant County Judge B. Glen Whitley, and Dr. Daniel K. Podolsky, UT Southwestern President

"This facility is superb. Its design is patient-centric, and its technology will transform the way we deliver treatment and services," said Dr. John H. "Jay" Lohrey, Assistant Professor of Internal Medicine and with the Simmons Cancer Center, who will serve as Medical Director in Fort Worth. "When I meet with a patient, our secure telemedicine links will enable us to videoconference with specialists at UT Southwestern who dedicate their careers to studying and treating exactly the type of cancer that my patient has in Fort Worth."

Each of the 14 infusion rooms is private, in contrast to typical facilities having all patients receive their chemotherapy in one large room. Patients will have control over the lighting and temperature of the room, enjoy a wide variety of online entertainment, and order delivery of meals online during their stay. Furniture selected specifically for comfort, soothing colors, and large windows complete the reassuring design of the rooms. On-site lab draws and pharmacy services offer needed convenience. A distinctive art gallery and sculpture garden offer peaceful areas for patients and their caregivers to rest and relax. ✤

FROM THE DIRECTOR | *Dr. James Willson*

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caring to their patients. Our nursing staff is 80 percent oncology certified, which validates that they have met rigorous national oncology requirements. Investing in certification shows commitment to providing quality care, helps to recruit and retain experienced nurses, and helps to meet accreditation requirements.

Surgical specialties at Simmons are led by world-renowned experts, including Dr. Michael Choti, Chair of Surgery, and an expert in gastrointestinal cancers; Dr. Kemp Kernstine, Professor of Cardio Thoracic Surgery and robotic surgery pioneer; and Dr. David Miller, Professor of Obstetrics and Gynecology and a principal investigator for the NCI Gynecologic Oncology Group.

Cancer care is a continuing challenge that can only be met through the ongoing impact of discovery. Our patients have access to the latest treatments plus clinical trials of innovative therapeutics. The current number of open clinical trials for cancer at UT Southwestern is 279, and more than 1,100 patients enrolled in these during 2014.

Beyond clinical investigation, there has been tremendous impact on our understanding of the biology of cancer through basic research and translational research. New cancer drug approvals by the FDA are soaring, with seven new approvals just since the start of this year. Traditional chemotherapy and radiation treatments of the past have given way to targeted treatments and tests for specific gene mutations and biomarkers. Finally, genetic testing shows great promise in determining personal cancer risk.

The challenge of cancer care will continue to inspire and guide us to make the needed investments in facilities, clinical personnel, and cancer researchers to meet the needs of our patients. ✤

James Willson

James K. Willson, M.D.

Dr. Willson holds The Lisa K. Simmons Distinguished Chair in Comprehensive Oncology.
Dr. Choti holds the Hall and Mary Lucile Shannon Distinguished Chair in Surgery.
Dr. Kernstine holds the Robert Tucker Hayes Foundation Distinguished Chair in Cardiothoracic Surgery.
Dr. Miller holds the Amy and Vernon E. Faulconer Distinguished Chair in Medical Science and The Dallas Foundation Chair in Gynecologic Oncology.

RADIATION ONCOLOGY

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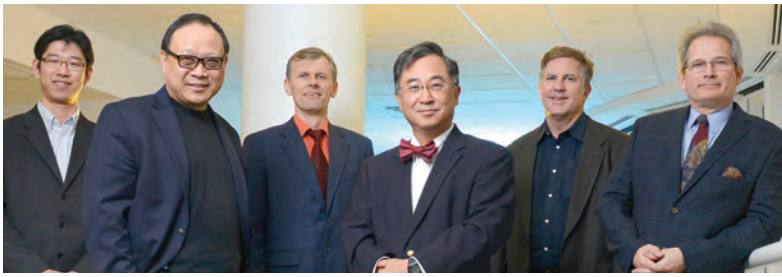
National Laboratory in 1954, but lack of funding shuttered the program in 1993, allowing other countries, fueled by extensive government support, to take the lead. Eight fully operational Heavy Ion Radiation Therapy Centers now exist worldwide in Japan, Germany, Italy, and China. Ten additional centers are in development, but none in the U.S.

A national center is important to re-establish U.S. prominence in the field and to provide the foundation of research needed to make this type of therapy available to U.S. cancer patients.

Building costs for the National Center for Heavy Ion Radiation Therapy, targeted for completion in 2021, are estimated at $200 million to $250 million, and would need a combination of federal, state, and private funding for construction and ongoing research. Potential economic impact estimates for Texas are more than $600 million, with 130 new high-level jobs created and 2,000 annual out-of-town visitors.

The Texas-based consortium consists of researchers from UT Southwestern, The University of Texas MD Anderson Cancer Center, Texas A&M University, Prairie View A&M University, Baylor College of Medicine, The UT Health Science Center at San Antonio, The UT Medical Branch at Galveston, and NASA, in addition to national and international collaborators. ✤



(L to R): Dr. Xun Jia, Assistant Professor of Radiation Oncology; Dr. Steve Jiang, Chief of the Division of Medical Physics and Engineering, Professor and Vice Chair of Radiation Oncology, holder of the Barbara Crittenden Professorship in Cancer Research; Dr. Arnold Pompos, Assistant Professor of Radiation Oncology; Dr. Hak Choy, Chair of Radiation Oncology; Dr. Robert Timmerman, Professor of Radiation Oncology and Neurological Surgery, holder of the Effie Marie Cain Distinguished Chair in Cancer Therapy Research; and Dr. Michael Story, Professor of Radiation Oncology, holder of the David A. Pistenmaa, M.D., Ph.D. Distinguished Chair in Radiation Oncology.

Dr. Podolsky holds the Philip O'Bryan Montgomery, Jr., M.D. Distinguished Presidential Chair in Academic Administration and the Doris and Bryan Wildenthal Distinguished Chair in Medical Science.
Dr. Choy holds The Nancy B. and Jake L. Hamon Distinguished Chair in Therapeutic Oncology Research.

Friends Update

FRIENDS GRANTS SUPPORT INNOVATIVE APPROACHES TO CANCER TREATMENT

Friends of the Comprehensive Cancer Center had cause for celebration at their third annual meeting when Co-Chair Patty Leyendecker announced that the group raised close to $400,000 for cancer research in just three years. She thanked the steering committee and membership co-chairs for their vital support in helping the group grow, followed by a special thank you from Dr. Daniel K. Podolsky, President of UT Southwestern.

Friends co-chairs Mark and Patty Leyendecker, Dr. James K. Willson, and Friends co-chairs Liz and Eric Van den Branden

"We are especially grateful for your support of our young investigators because of the constrained national funding for research they face in starting their careers. Your generosity creates opportunities for them to pursue research projects and make discoveries they might not otherwise have been able to do." said Dr. Podolsky. Two researchers received $50,000 each to continue their research into therapeutic resistance and bone metastasis, two areas that continue to challenge cancer physicians.

Dr. Elisabeth Martinez, Assistant Professor of Pharmacology, aims to identify and characterize modulators of enzymes that control gene expression. Her team works to find novel ways to prevent gene expression changes that facilitate resistance to cancer treatment.

Dr. Yihong Wan, Assistant Professor of Pharmacology and Virginia Murchison Linthicum Scholar in Medical Research, has a sweeping goal to better understand the regulation of development, metabolism, and cancer. She leads a team that has recently identified a class of microRNA molecules that may be important suppressors of bone metastasis.

These exciting grant announcements were followed by a summary by Dr. Podolsky of recent developments, including the opening of the William P. Clements Jr. University Hospital; patient satisfaction survey results of 96 percent; a master plan to make the former St. Paul University Hospital site a center for teaching, training, and ambulatory care; and a plan to focus Zale Lipshy University Hospital on brain diseases.

Dr. James K. Willson, Associate Dean of Oncology Programs, Director of the Simmons Cancer Center and Professor of Internal Medicine, shared his excitement over an upcoming announcement that elevates the center's National Cancer Institute (NCI) rating to "comprehensive" – a designation that recognizes achievements in research, cancer care, clinical trials, and population science studies.

Featured speaker at the event was Dr. Sean Morrison, Director of Children's Medical Center Research Institute at UT Southwestern and Professor of Pediatrics. His fascinating presentation on melanoma explained the stages of the disease and the difficulty of treating late-stage disease that has spread through the body. ✤

Dr. Morrison holds the Mary McDermott Cook Chair in Pediatric Genetics and is an Investigator of the Howard Hughes Medical Institute.

Ginny Eulich, Diane Scovell, Dr. Joan Schiller and Linda Willson

Dr. Sean Morrison and David Rambie

Friends co-chair Liz Van den Branden, grant winner Dr. Yihong Wan, and Friends co-chair Patty Leyendecker

Join Us

JOIN THE FRIENDS OF THE COMPREHENSIVE CANCER CENTER

NCI·CC
A Cancer Center Designated by the National Cancer Institute

The Harold C. Simmons Comprehensive Cancer Center is working diligently toward its mission to reduce the burden of cancer. A gift to join the Friends of the Comprehensive Cancer Center will support innovative and highly promising projects that directly impact cancer research and care. In addition to supporting the Simmons Comprehensive Cancer Center, members will enjoy educational benefits throughout the year. Annual memberships start at $500 for individuals or couples, and at $250 for Younger Friends up to age 40. We also welcome gifts of larger amounts, which will accelerate our goals.

Membership at the $250 level and above is recognized in UT Southwestern's *Southwestern Medicine* Annual Review. For more information, please call the Development Office at 214-648-2344.

PATIENT AND COMMUNITY OUTREACH PROGRAMS AVAILABLE

Support groups are available at the Harold C. Simmons Comprehensive Cancer Center, led by licensed social workers. Meetings are scheduled regularly for:

- Ovarian cancer
- Thoracic/lung cancer
- Husbands and partners of women with cancer
- Prostate cancer
- Breast cancer
- Brain cancer

For more information about patient-care services at the Simmons Cancer Center, please call 214-645-HOPE (214-645-4673) or toll-free, 866-460-HOPE (866-460-4673).

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