Message from the Chair

More than a year ago, we opened our expanded building with the idea of providing personalized, unique treatments for each of our patients. During this time, we have learned that adaptive treatments require a lot of monitoring and time to provide patients the best personalized care.

The speed at which we accomplish these treatments has improved. When we first started, an adaptive treatment could take up to two hours to complete. Today, we can perform multiple adaptive treatments simultaneously — all facilitated by unique tools and processes created by our physicists.

We won’t stop looking for ways to improve — from trying to incorporate not only the imaging changes in a patient but also blood marker differences, functional imaging differences, repeat biopsies, including biopsies of the tumor, or even patient samples from their microbiome.

Our department continues to expand the use of PULSAR™ to other critical organ areas as seen in our featured clinical trial as well as with our MR-linac and Ethos systems. Artificial intelligence (AI) research continues to be a strong focus, particularly in regard to tool development — with one featured AI project receiving an R01 and another being sought after by commercial investors.

Additionally, new molecular biology research from our team uncovers new details in breast cancer specifically related to endocrine therapy resistance, which helps us ultimately improve therapy development.

Over the past 18 months we’ve learned that there is far more potential than we ever considered when we first went down this path. And that gives us plenty of room to improve over the next many years.

Robert Timmerman, M.D., FASTRO, FACR
Chair, Department of Radiation Oncology
Effie Marie Cain Distinguished Chair in Cancer Therapy Research
When Beverly Damon, 54, of Rowlett was diagnosed with cancer this past February, she knew she needed to act fast and find the best place possible. While she weighed all her options, the decision ultimately wasn’t a difficult one. She would turn to the same hospital that had treated one of her family members.

Mrs. Damon, originally from Vermont, has lived in Texas for more than 20 years and works in commercial insurance. She and her husband, Christopher, have two children and two grandchildren. Shortly after they married and moved to New England, Christopher was diagnosed with cancer. His initial treatments were at Dartmouth-Hitchcock Medical Center in New Hampshire, but not long after he began treatment the couple decided to move back to Texas. They looked at a few different hospitals, ultimately landing at UT Southwestern Medical Center.

“They took such great care of my husband — he's actually in remission now,” Mrs. Damon says. “So as soon as I checked my medical packet, UT Southwestern is where I decided I was going to go.”

An appointment with Marilyn Leitch, M.D., Professor of Surgery and the S.T. Harris Family Distinguished Chair in Breast Surgery, revealed that she had stage 1 invasive ductal carcinoma, and both surgery and radiation would be recommended. The radiation would be given by Asal Rahimi, M.D., M.S., Associate Professor of Radiation Oncology, Chief of Breast Radiation Oncology Service, Medical Director of the Simmons Cancer Center Clinical Research Office, and Department Associate Vice Chair of Diversity, Equity, and Inclusion.

Over the past decade, radiation treatment for breast cancer has been moving from treatment of the whole...
breast toward the option of partial breast radiation, a focus of special training Dr. Rahimi completed with the American Brachytherapy Society. This approach spares the heart, lungs, and skin from unnecessary radiation. Dr. Rahimi has been a strong force in building the stereotactic partial breast radiation program at UT Southwestern and is the principal investigator on multiple clinical trials studying partial breast radiation for early-stage breast cancer.

Upon meeting with Mrs. Damon, Dr. Rahimi explained that the cancer was slow-growing, but because of the posterior location of the tumor she would not be a candidate for treatment on the GammaPod, which is the first stereotactic body radiation therapy system optimized for treating breast cancer.

“That was initially disappointing, but I loved talking with Dr. Rahimi because she calmed my fears and any stress and confusion I had about treatments,” Mrs. Damon recalls. “She never pushed me and told me not to worry, that there was another option. And that’s when I went on to the Ethos machine.”

UT Southwestern’s Department of Radiation Oncology has the largest collection of adaptive radiation machines in the world within a single facility, two of these being Ethos systems. Adaptive radiation is an emerging modality in radiation therapy in which the tumor or target is visualized with CT scan on a daily basis. These adaptive machines, including the Ethos platform, can then quickly replan the patient based on daily changes to the patient’s anatomy, tumor size, and position. Traditionally, a new plan would take up to five days to generate, but with this technology planning is instantaneous, allowing the patient to benefit from lower doses to surrounding organs. This is very important when organs such as the heart, liver, stomach, and bowels are in the treatment area.

The department’s breast radiation group recently published a manuscript in the Journal of Applied Clinical Medical Physics surrounding research with the Ethos system as a new option delivering stereotactic partial breast radiation for patients who cannot be treated on other platforms due to prone positioning or the location of the cavity. This was the first adaptive partial breast radiation manuscript to date.

Traditional partial breast radiation treats a significant amount of breast tissue due to the uncertainty of the tumor cavity location because the breast can lie in many different positions. With high radiation dose per treatments, decreasing the amount of normal breast receiving radiation correlates to better long-term cosmetic outcomes. Methods at UT Southwestern have been developed to treat less normal breast tissue out of uncertainty — stereotactic partial breast radiation. In the published manuscript, these methods, paired with the adaptive technology, allow for delivery of adaptive radiation to the tumor cavity during each treatment, which allows the treating physician to focus radiation on the high-risk areas.

“This validates Ethos as a powerful platform for delivering partial breast radiation, and with confidence,” says Steven Montalvo, M.D., second-year radiation oncology medical resident and lead author of the manuscript. “Perhaps the most exciting aspect of this paper is it suggests we can cut the uncertainty margin even further, even by greater than 50%, with precise targeting and adaptive technology at our hands.”

According to both Dr. Rahimi and Dr. Montalvo, when given the choice between an adaptive plan and a pre-planned radiation plan, the majority of physicians chose the adaptive...
option due to less dose surrounding organs and better coverage of the target.

Mrs. Damon says couldn’t have been more pleased with with the entire process involving the Ethos. Her skin tolerated the treatments phenomenally, with no blistering or burns and minimal Aquaphor and aloe vera needed.

In her numerous post-treatment visits, any medical specialist who has examined her treated breast has told her how remarkably well she has done. Emotionally, from where she began in February to now, she is in a great place. Like her husband, Mrs. Damon credits UT Southwestern for the excellent care and the compassionate people around her every step of the way.

“If I knew somebody with breast cancer, or any cancer really, UT Southwestern is the first place I would send them to,” she says. “Because of them, I now have normalcy back in my life.”

Asal Rahimi, M.D., M.S.
Associate Professor
Medical Director, Simmons Cancer Center
Clinical Research Office
Department Associate Vice Chair of Diversity, Equity, and Inclusion
Patient Spotlight: Priscilla’s Story

By Ryan Daugherty

In February 2022, Priscilla Evans started feeling extreme heartburn with pain shooting down both of her arms and chest. When she visited her doctor, she was told there was something the size of a lemon in her chest. It would turn out to be a tumor on her right lung.

UT Southwestern Medical Center has long been recognized as a leader in the field of radiation oncology for advancing research in stereotactic ablative radiotherapy (SAbR) and immunotherapy, providing personalized patient care with artificial intelligence, and now adaptive therapy.

Adaptive therapy is a new treatment technique combining real-time, high-resolution imaging and modern radiation techniques to deliver ultra-precise treatment that can be quickly adapted to changes in patients’ tumor size, normal organ relationships, and daily position on the treatment couch.

The Department of Radiation Oncology houses
two linear accelerators that can deliver radiation connected to an MRI machine that perform and conduct magnetic resonance images as well as a diagnostic MRI; these are called MR-linacs. Traditional approaches use CT scan images, which are beneficial in delineating differences between soft tissue and hard tissue such as bone; however, they are not as effective or efficient in imaging soft tissues.

Being an adaptive machine, the MR-linac allows physicians to reconfigure plans to better suit any changes in the volume, anatomy, position, and shape of a tumor with respect to adjacent normal tissues. The MRI helps to better delineate in real-time the tumor from the normal tissue. This is where the MR-linac has significant advantages over traditional approaches, according to Puneeth Iyengar, M.D., Ph.D., Associate Professor of Radiation Oncology and Vice Chair of Strategy and Program Development.

“There are certainly a number of implications of the MR-linac to our treatment field, prostate cancer being one and cancers below the diaphragm that are not well-visualized with CT-based imaging, such as kidney, gynecological, and cervical cancers,” says Dr. Iyengar, Chief of Lung Radiation Oncology Service. “And lung cancer can be optimized with these treatments, as we have many that can be close to the esophagus, nerves, heart, airway, and spinal cord.”

As a key member of the radiation oncology team at UT Southwestern, Dr. Iyengar is an expert in treating lung cancer patients. He also leads a research lab with two missions — discovering how lung tumors become therapeutically resistant and understanding the basic mechanisms of cancer cachexia, a wasting process of the body that’s associated with certain types of tumors, primarily lung and gastrointestinal tumors.

Being on the forefront of treatment technology and seeing how he can make a difference in the lives of lung cancer patients drew Dr. Iyengar to UT Southwestern 12 years ago. The challenges of the disease, the need to understand it, and the rapport he develops with his patients keep him here, along with a world-class team of health care providers focused on the same goal.

In March, Ms. Evans, 71, came to UT Southwestern to be treated for the tumor on her lung, which was a stage 3 non-small cell lung cancer. She was a good candidate for the MR-linac and was treated by Dr. Iyengar. Over two months she received 30 fractions along with chemotherapy.

While Ms. Evans recalls not knowing what to expect when she walked through the front doors, she remembers being immediately struck by the friendliness and competence of the staff — starting at the front desk. That carried over throughout the entire visit, from her treating therapists and nurses to Dr. Iyengar.

“I just felt safe,” she says. “They didn’t throw anything to the side and listened to what I said. Everybody listened to what I said.”

Treatments on the MR-linac went smoothly as well, with no noted side effects throughout the course
of her treatment. During one of her last visits, Ms. Evans was told her tumor had shrunk considerably.

Ms. Evans has been retired for more than three years now after working as a telephone operator for 25 years at Hilton Dallas Lincoln Center. She has been an active member of the African Methodist Episcopal Church for nearly 60 years and looks forward to continuing involvement in the church post-radiation treatments.

She is also happy to get back to daily activities, such as cleaning her house, going to the store, and hanging out with her 6-year-old grandson, who keeps her active.

“When you hear ‘cancer’ you can only think of the worst, but I’m OK now,” she says. “I’ve just gone back to doing what I want to do. My daughters are always telling me to slow down, but I have all this energy so I can’t — I live life every day to the fullest.”

Ms. Evans at her church, where she is President of the Usher’s Board

Puneeth Iyengar, M.D., Ph.D.
Associate Professor
Vice Chair, Strategy and Program Development
Clinical Trial: Cervical Cancer

PULSAR Trial

By Sepeadeh Radpour

STU2021-0787: A safety lead in single arm phase 2 study for image-guided ultrafractionated radiation therapy for treatment of metastatic cervical cancer

Condition: Newly diagnosed FIGO IVB squamous, adenosquamous, or adenocarcinoma of the uterine cervix, with radiographic or biopsy evidence of metastasis with intact primary

Treatment: Personalized ultra-fractionated stereotactic radiotherapy (PULSAR™): 8 to 8.5 Gy per pulse, totaling 5 pulses with the frequency of pulses being 1 pulse every 3 to 5 weeks, depending on response, to primary disease in pelvis; this is in addition to the previously planned systemic therapy

Potential benefits: Improved overall patient survival outcomes and potential increase in their quality of life

Although tremendous advancements have been made in recent years in the screening, diagnosis, and treatment of cervical cancer, survival rates for stage 4B patients remain unimproved while survival rates have improved for other stage 4 cancers. Consequently, a new clinical trial at UT Southwestern led by Chika Nwachukwu, M.D., Ph.D., Assistant Professor of Radiation Oncology, is targeting this unmet area to investigate if we can improve management and outcomes in metastatic cervical cancer. This will be done through application of PULSAR, an adaptation of SAbR that delivers radiation therapy in a manner that activates the immune system through spaced-out delivery of radiation pulses. “We hope to see an improvement in overall outcomes, and we think we can treat patients safely with this method,” Dr. Nwachukwu says.

Thirty patients will be included in this study, and accrual will last 24 months depending on tolerance, with 18 months of follow-up. Two patients have been enrolled in the study so far. “Using PULSAR as the treating technique is appropriate because of the problems associated with cervical cancer — the area to treat is large, not well-defined, and close to organs such as the bladder and rectum. Treatment with large radiation pulses can cause significant toxicity to those normal structures, so using the PULSAR technique will help minimize these toxicities as it naturally gives the normal tissue time to recover,” Dr. Nwachukwu explains. “Some of these patients die from very aggressive local disease. If we treat the primary disease, we will improve local control in the pelvis, so it remains to be seen if local control leads to improvement in overall survival.”

Noting that metastatic cervical cancer median overall survival is still only around 17 months, Dr. Nwachukwu says, “This trial is very exciting as it has the opportunity to really change the paradigm for how we treat cervical cancer patients, as well as the potential to extend patient lives.”

Chika Nwachukwu, M.D., Ph.D.
Assistant Professor
Associate Director, Medical Residency Program
Targeting ESR1 Mutations to Overcome Treatment Resistance in Breast Cancer

By Sepeadeh Radpour

Through discovery of new vulnerabilities in a highly aggressive form of breast cancer, Prasanna Alluri, M.D., Ph.D., Assistant Professor of Radiation Oncology, and his research team are paving the way for improved and personalized treatments for breast cancer patients.

Estrogen receptor (ER)-positive breast cancer is the most common form of breast cancer and accounts for more than 75% of all breast cancer cases. Endocrine therapies, which block ER signaling, are the backbone of systemic therapy in these patients. However, nearly all patients with metastatic ER-positive breast cancer eventually develop resistance to all clinically approved treatments. Mutations in the gene encoding estrogen receptor gene (ESR1) are one of the most common mechanisms for development of resistance to endocrine therapies. The Y537S mutation, in particular, exhibits a highly aggressive clinical course and is associated with a high degree of resistance to all endocrine therapies. So far, development of drugs that selectively target this mutation has been elusive.

In a recent study published in *JCI Insight*, Dr. Alluri and his team of collaborators performed a high-throughput drug screen against ESR1 mutant breast cancer cells and identified a new therapeutic vulnerability for this highly aggressive breast cancer subtype. They have shown that OTX015, a small molecule inhibitor of the bromodomain and extraterminal domain (BET) family of proteins, exhibited high selectivity in killing breast cancer cells harboring the Y537S mutation. They have further shown that BRD4, a BET family protein, interacts with mutant ER proteins and mediates their role in conferring endocrine therapy resistance. OTX015 disrupted this interaction between BRD4 and mutant ER proteins and reversed endocrine therapy resistance. When combined with abemaciclib, a clinically approved CDK4/6 inhibitor, OTX015 has shown more potent tumor growth suppression in mouse models of endocrine therapy-resistant breast cancer than existing standard-of-care treatments. Using in vitro competition studies between wild-type and ESR1 mutant breast cancer cells, the authors have also shown that OTX015 also prevents/delays development of endocrine therapy resistance in ER-positive breast cancer.

“Our study has many implications for treatment of breast cancer patients,” Dr. Alluri says. “We have identified, for the first time, a drug that shows higher selectivity in killing ESR1 Y537S mutant breast cancer cells. This is a particularly exciting finding because numerous BET inhibitors are currently in advanced stages of clinical development. Our study will guide patient selection and design of combination treatments for future BET inhibitor trials.” As a next step, Dr. Alluri and his team are studying how endocrine therapy resistance in localized breast cancer patients impacts response to radiation therapy. “Because endocrine therapy is increasingly being administered to patients with localized ER-positive breast cancer in the preoperative setting, this gives us an opportunity to personalize radiation treatments based on response to endocrine therapy,” Dr. Alluri concludes.

This study was led with SM Udden, Ph.D., an instructor in Dr. Alluri’s laboratory, and involved collaborations with other investigators at UT西南, University of Michigan, University of North Carolina at Chapel Hill, and Vanderbilt University. This work was supported by grants to Dr. Alluri from the Breast Cancer Research Foundation, Conquer Cancer Foundation, Cary Council of Southwestern Medical Foundation, META Vivor, and the Department of Defense Breast Cancer Research Program.

Prasanna Alluri, M.D., Ph.D.
Assistant Professor
Through the development of predictive models with a focus on optimization with high sensitivity and specificity, Jing Wang, Ph.D., Associate Professor of Radiation Oncology and Director of Data Management, David Sher, M.D., M.P.H., Professor of Radiation Oncology, Vice Chair, and Medical Director for Clinical Operations and Quality, and faculty in the Medical Artificial Intelligence and Automation (MAIA) Lab, seek to develop a robust model that delivers the ideal radiation therapy plan.

Detection of lymph node metastasis is a continuing point of weakness, particularly in head and neck cancers. Until now, nodal malignancy ground truth has required a postoperative pathology/histology report for confirmation, because specificity and sensitivity from PET and CT scans are in the 50% to 60% range. However, a new and first-of-its-kind endeavor study that uses artificial intelligence (AI) to predict cervical node metastasis at UT Southwestern has received a five-year NIH R01 grant. This study is titled “A multifaceted radiomics model to predict cervical lymph node metastasis for involved nodal radiation therapy” and is led by Dr. Wang and Dr. Sher.

“Our ability to accurately classify nodes as malignant or benign with this technology has enabled our department to pioneer a novel method of treating head and neck cancer called involved nodal radiotherapy (INRT), which appears to markedly improve acute and long-term side effects of treatment. This grant will allow us to further refine and optimize this model and then prove how its implementation in INRT is superior to the current standard of care,” Dr. Sher says.

The project uses previously collected imaging and surgical data from a closed clinical trial, INRT-AIR, with the goal of the project being to create and test an accurate and precise, multifaceted predictive model for lymph node metastasis. Under the support of this R01 grant, the model will first be fine-tuned and optimized using additional imaging data from patients with lymph node metastasis status confirmed by pathological reports. The model will then be tested in a randomized clinical trial, comparing INRT with comprehensive neck radiotherapy to confirm the efficacy of this UTSW-grown paradigm. This algorithm will hopefully be used to both maximize the efficacy and minimize the toxicity of involved nodal radiation therapy for head and neck cancer patients, following suit with the department’s push toward truly personalized treatment planning for every patient.

“While AI has shown great promise in various aspects of health care, clinical adoption of AI is very slow,” Dr. Wang says. “I feel lucky that this AI model is adopted by Dr. Sher and used in a prospective clinical trial setting. After successful completion of this project, I hope we can extend our model to other disease sites. I also hope clinical adoption of AI could be sped up so that more patients could benefit from the potentials of AI.”
UTSW’s Department of Radiation Oncology recently filed a patent application for a dose-prediction model that we have been using in our regular head and neck cancer treatment for more than two years.

Shortly after we filed, Houston-based company InformAI, which focuses on building artificial intelligence (AI) and deep learning algorithms, reached out to us. The company showed great interest in our patented technology, with the desire to license it while they simultaneously submitted for a Cancer Prevention and Research Institute of Texas (CPRIT) new product award. CPRIT has historically supported and funded promising new cancer-related products, and InformAI was just awarded funding from CPRIT to develop our technology into a product. It is still very early in the process, but this means that our technology will eventually become accessible to the whole community of cancer radiotherapy through a commercial product from InformAI.

Our dose-prediction AI model predicts an optimal radiation dose plan based on each patient’s anatomy and is used for individual planning. Because every patient has a different anatomy, the optimal dose distribution is different for each patient. The tool we have developed can learn the relationship between the patient’s anatomy and the optimal dose distribution from a cohort of previously treated patients, predicting the optimal radiation dose to deliver. That is, it comes up with individualized AI-based directives in order to complement the planning process and to better optimize the treatment each patient receives for more efficient and individualized dose planning.

“It really echoes the personalized medicine mission of the department, as the model uses AI to predict the expected dose from the contours, so each patient’s dosimetry directive is customized to their individual anatomy rather than some standard list of constraints,” Dr. Sher says. “We’ve published on how this improves dosimetry outcomes.”

InformAI will use the funding award to license the intellectual property and to hire people to transform and create the model into a commercial product.

“This is very exciting because we have been doing so much AI research that we use to help our own patient care through a close collaboration among the AI research team led by Dan Nguyen, Ph.D., Assistant Professor, the clinical physics team led by Mu-Han Lin, Ph.D., Associate Professor and Director of Treatment Planning, and the head and neck cancer radiation oncologist team led by Dr. Sher,” says Steve Jiang, Ph.D., Vice Chair, Digital Health and AI and Chief of the Division of Medical Physics & Engineering. “Now our tool is going to become a commercial product available to the whole community to help improve care and treatment to patients outside of UT Southwestern, which makes us feel we’re making big strides to integrate AI into and improve the field of cancer care.”

David Sher, M.D., M.P.H.
Professor
Vice Chair and Medical Director, Clinical Operations and Quality

Steve Jiang, Ph.D.
Professor and Vice Chair, Digital Health and AI
Chief, Division of Medical Physics & Engineering
In January 2022, Asal Rahimi, M.D., M.S., Associate Professor and Chief of Breast Radiation Oncology Service, was elected as the department’s Associate Vice Chair of Diversity, Equity, and Inclusion (DEI). In her role, Dr. Rahimi serves as an adviser on issues relating to diversity, equity, and inclusion and will work closely with Quinn Capers, M.D., Professor, Associate Dean for Faculty Diversity, and Vice Chair for Diversity and Inclusion, Department of Internal Medicine, and his group to collaborate on important initiatives to address challenges and opportunities in this area and to share best practices across departments.

We are committed to fostering a sense of belonging among team members so they are able to proudly bring their whole selves to work without having to sacrifice meaningful aspects of their identity. Through these unique and valuable life experiences, we aim to provide culturally competent care to a diverse patient population, while striving to optimize diversity, equity, and inclusion amongst our residents, staff, and faculty.

The DEI committee includes Chika Nwachukwu, M.D., Ph.D., Assistant Professor and part of both our gynecologic and breast teams, and Nina Sanford, M.D., Assistant Professor and Chief of Gastrointestinal Radiation Oncology Service, as well as 25 staff members from around the department. The team’s focus is to develop competencies around diversity, equity, and inclusion, which include professional development, recruitment efforts, and other engagement opportunities.

By Mary Whitmore

Diversity, Equity, and Inclusion

Radiation Oncology’s DEI team
Mona Arbab, M.D., M.Ed.
What inspired you to pursue a career in radiation oncology?

I was very lucky to be introduced to the field of radiation oncology as a medical student. During my training, I was honored to have great radiation oncologists as my mentors who showed me the beauty of the field. I was fascinated by the multidisciplinary approach in taking care of our patients, research opportunities, collaborations, and the integration of physics, radiation biology, and technology into the field. I also enjoy the long-term relationships doctors develop with patients.

Why did you choose UT Southwestern?

The Department of Radiation Oncology at UT Southwestern provides the ideal environment for innovation, research, and education. I am inspired by all of the great radiation oncologists, physicists, radiation biologists, nurses, radiation therapists, and dosimetrists in our department who are providing excellent care to our patients in addition to advancing the field. I am very fortunate to be part of this team.

What do you feel are your most exciting achievements so far?

I am very proud of my diverse background and the opportunities I have had during my training that have given me a new perspective in my career. I spent a few years as a postdoctoral researcher doing basic science research, was part of the clinician-educator training pathway during residency, and also earned a master’s degree in education. In addition, I was honored to serve as Chair of the American College of Radiation Oncology (ACRO) Resident Committee.
• **What advice do you have for someone wanting to pursue a career in radiation oncology?**

As a clinician-educator, I am very passionate about introducing our field to medical students because radiation oncology is underrepresented in medical education. I encourage all medical students to explore our field because during their training they will definitely see patients who have undergone radiation. For those interested in pursuing a career in radiation oncology, it is important to reach out to the radiation oncologists and build relationships with the right mentors to have a better understanding of the field.

• **What inspired you to pursue a career in medicine and radiation oncology?**

I was initially inspired to pursue a career in medicine because of the experiences several family members had as patients and seeing how much an impact their medical teams had on their lives. Later on, I was drawn to radiation oncology because of the close relationships radiation oncologists are able to develop with our patients during treatment. Having studied engineering in college, I also found the technologies used to deliver precise radiation fascinating.

• **What do you like most about your job?**

What I like the most about my job are the amazing colleagues I work with every day. Everyone is dedicated to working as a team to provide the highest quality care for our cancer patients. I’m fortunate to work with subject matter experts to offer the latest treatment advances for our patients.

• **What are some of your research interests?**

I am excited about technology advances in clinical oncology and translating these into different practice settings. During residency, my research used machine learning to improve clinical data quality for cancer patients. While
there are many ways in which technology could potentially improve our ability to care for patients, validation and thoughtful implementation of such tools will also be important.

- **What is one thing people would not know about you?**

  My wife and I recently moved to Dallas and have been exploring the food scene. My favorite dessert is probably ice cream. I once won a T-shirt after completing a banana split-eating challenge.

- **What inspired you to pursue a career in medicine and radiation oncology?**

  My grandfather opened the first clinic in a rural inner Mongolian town 80 years ago, which became the first hospital in the region later on. I was naturally drawn to the field of medicine as I always looked up to him as a hero who served thousands of our ethnic people through difficult times of war, famine, and natural disasters. During medical school, radiology caught my eyes first with its modern technologies that enable accurate and functional imaging of human anatomy and pathology. I enjoyed the intellectual challenges studying sophisticated cancer biology in the lab and appreciated both the psychosocial intricacies as well as the overwhelming sense of achievement from taking care of cancer patients. Combining everything together, radiation oncology was the ultimate specialty for me, and I feel extremely lucky to have finished my training and now having joined UT Southwestern as a practicing radiation oncologist.

- **Why did you choose UT Southwestern?**

  UT Southwestern is highly regarded in the scientific community and has always been on my radar since my days studying cell biology at the NIH. To a radiation oncologist, UT Southwestern is almost like the Taj Mahal as it houses the largest collection of advanced radiation treatment machines
in the world. The department is home to many international experts and thought leaders in the field and is ever intent on dynamically expanding with a focus to advance our field with precise and personalized radiotherapy. In addition, the DFW metropolitan area has been growing rapidly with a robust economy and diverse population, attracting like-minded and family-oriented young professionals from all over the country. Therefore, it is the whole package of the city, the institution, the department, and the people that made the decision to choose UT Southwestern a no-brainer for me.

• **What do you like most about your job?**

The best part of my job is being able to help our patients using the most advanced radiation technology. Radiation treatment can be curative for many types of cancer, which is very satisfying to offer to our patients. At other times, radiation might not be curative but can still provide palliation to a patient’s symptoms and improve their quality of life tremendously, which is no small feat either. Now that we’re able to offer more precise radiation treatments that are far less toxic and more potent than decades ago, it has become even more enjoyable to build and maintain the coalition with our patients through their individual journeys of radiation treatment.

• **What advancements are you most excited about in cancer treatment?**

I am most excited about the advances in biologically targeted cancer therapy in recent years that have transformed modern oncology with unprecedented gains in survival from many types of cancer. These treatments, including small molecule inhibitors, monoclonal antibodies, or cellular therapies, target the cancer cells based on their biology, either directly modifying an aberrant signaling pathway within the cancer cells or activating the host immune system to annihilate the cancer cells. On the other hand, although radiation has always been a central pillar of modern cancer treatment and radiobiology has been around for more than a century, we haven’t been able to use more biological information such as genomic profiling to personalize radiotherapy. To this end, I am very excited about the potentials and am dedicated to the research and application of personalized radiotherapy, where the most optimal timing, radiation dose, and combination with systemic agents will lead to the best treatment outcomes possible with the fewest side effects.
Spotlight on New Roles

**Puneeth Iyengar, M.D., Ph.D.,** Associate Professor and Chief of Lung Radiation Oncology Service, has been appointed Vice Chair, Strategy and Program Development. His key focuses are developing and building an infrastructure for data management, overseeing the development and implementation of new protocols and workflows around adaptive/PULSAR therapy, increasing market share across Dallas-Fort Worth, and planning for satellite locations and the Hadron Therapy Center.

**David Sher, M.D., M.P.H.,** Professor and Chief of Head and Neck Radiation Oncology Service, has been appointed Vice Chair and Medical Director, Clinical Operations and Quality. Dr. Sher's key responsibilities include serving as our department's medical director and liaison to partner facilities, overseeing clinical activities of clinicians and advanced practice providers, supervising clinical operations to optimize accessibility and efficiency in the clinic with a focus on patient satisfaction, and analyzing referral patterns and treatment volumes to identify trends and opportunities to build clinical volume.

**Andrew Wang, M.D.,** Professor, has been appointed Vice Chair, Translational Research and Commercialization. In this new role, Dr. Wang's focus is on increasing federally funded research, specifically within the physician division; developing and promoting translational research and physician-scientists; helping to manage intellectual property portfolios and promoting translation-entrepreneurship; and engaging with the development office and promoting philanthropy. Dr. Wang holds the A. Kenneth Pye Professorship in Cancer Research and is part of both our genitourinary and gastrointestinal teams.
Andrew Godley, Ph.D., Associate Professor, has been appointed Associate Vice Chair, Clinical Physics Operations and Quality. Dr. Godley’s priorities include overseeing treatment operations, including planning, delivery, and workflows, as well as quality assurance and patient safety and satisfaction related to treatments; supervising clinical operations to optimize accessibility and efficiency in treatment planning and chart checks and commissioning new equipment and systems; assisting with the integration of adaptive radiotherapy techniques into a routine workflow; and overseeing engineering efforts.

Arnold Pompos, Ph.D., Associate Professor, has been appointed Associate Vice Chair, Strategic Initiatives and Capital Investments. In his new role, Dr. Pompos is responsible for the oversight of strategic planning for new technological innovations and facilities of the department, as well as capital purchases and service contracts for equipment and/or software used; development of new automated workflows for physicians and clinical staff working on MR-linacs; and planning for satellite locations and the Hadron Therapy Center.

Raquibul Hannan, M.D., Ph.D., Chief of Genitourinary Radiation Oncology Service and principal investigator of the Hannan Lab, was promoted to Professor.

Weiguo Lu, Ph.D., part of the Medical Physics & Engineering Division, was promoted to Professor.

Zabi Wardak, M.D., Chief of Central Nervous System Radiation Oncology Service and Medical Director of the Gamma Knife Program, was promoted to Associate Professor.
## OUR CLINICAL FACULTY

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<td>Todd Aguilera</td>
<td>M.D., Ph.D. Assistant Professor</td>
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<td>Kevin Albuquerque</td>
<td>M.D., FACR Professor and Director of Radiation Oncology Accreditation</td>
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<td>Neil Desai</td>
<td>M.D., M.H.S. Associate Professor</td>
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<td>Dedman Family Scholar in Clinical Care</td>
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<td>Aurelie Garant</td>
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<td>Chief of Genitourinary Radiation Oncology Service</td>
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<td>Kiran Kumar</td>
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<td>Eugene P. Frenkel, M.D., Clinical Scholar</td>
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<td>Medical Director, SCCC Clinical Research Office</td>
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<td>Department Associate Vice Chair of Diversity, Equity, and Inclusion</td>
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<td>Nina Sanford</td>
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<td>David Sher</td>
<td>M.D., M.P.H. Professor and Vice Chair, and Medical Director for Clinical Operations and Quality</td>
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<td>Robert Timmerman</td>
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<td>Yuan yuan “Faith” Zhang</td>
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For referrals or to schedule an appointment, please call 214-645-8525.

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