UT Southwestern
Simmons Cancer Center
Radiation Oncology

THE TARGET

DEPARTMENT OF RADIATION ONCOLOGY

VOL.10
SUMMER 2023

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Message from the Chair

While we continue our efforts to deliver truly personalized treatments, our faculty are working to improve patient outcomes through additional avenues. When patients receive radiation treatments, we try to avoid vital organs such as the heart as much as possible with the use of breath-hold techniques. To further improve this process, our department has implemented a tool called surface-guided radiation therapy (SGRT). The benefits of SGRT include more effective breath-holds, increased accuracy and precision in radiation delivery, and minimized exposure to healthy tissues. These efforts have been carried over to our adaptive machines, allowing us to deliver even more effective, high-tech care.

Continuing the focus on SGRT, our featured clinical trial looks at its application in lung and liver cancer patients. This trial revolves around improving the patient experience as well as radiotherapy accuracy through use of SGRT technology to track patient surface motion during deep inspiration breath-holds.

Furthermore, we describe new preclinical study findings regarding a potential new route of personalizing radiation treatment for breast cancer patients. The hope is to one day be able to personalize all cancer patients' radiation treatments, bringing us closer to our goal: truly personalized cancer treatment.

Our department has also started an exciting initiative that will involve collecting and storing vital patient information to improve radiotherapy outcomes, including multiple adaptive radiotherapy avenues. A key factor will be artificial intelligence, which will help us to collect biological tissue, physics and imaging data, and other alternative data, such as quality-of-life measures.

Robert Timmerman, M.D., FASTRO, FACR
Chair, Department of Radiation Oncology
Effie Marie Cain Distinguished Chair in Cancer Therapy Research

John (center) with the band Melt-Banana at a 2022 concert in Prague.

+ Patient Spotlight: **John Clardy**

By Ryan Daugherty

John Clardy, 38, describes himself as someone with a "very active lifestyle" who maintains a generally healthy diet. While living in Los Angeles, he would ride his bike and surf weekly in addition to teaching drums seven days a week. For nearly 15 years he has been a professional drummer for Tera Melos, an American rock band whose style is characterized by quickly alternating rhythmic patterns, start-stop dynamics, and improvisation, among other elements.

In mid-September 2019, he hit a wall health-wise as he started feeling abnormally tired and fatigued, which led to worsening breathing. When he was 10 pounds below his normal weight at a physical, concern started to kick in.

The results of his physical flagged that he had iron-deficiency anemia, but a few additional tests failed to reveal anything further. In January 2020, an X-ray and CT scan showed a mass behind John's heart and in front of his esophagus; one month later it was displacing his trachea. He received two initial biopsies, but both came back nondiagnostic.

"It was apparent that I was rolling toward that cliff, kind of faster and faster by the week," he recalls. "And my parents were alternating flying in from Texas, so it was a lot. After that second biopsy, we decided that I'd go back to Texas to get it all figured out."

John first went to The University of Texas MD Anderson Cancer Center for a consultation. His scans showed he had a tumor blocking 90% of

Surface-guided radiation therapy technology includes three ceiling-mounted cameras and a screen for motion management.

his brachiocephalic vein. Based on the data, he was told that he either had Hodgkin lymphoma or mediastinal B-cell lymphoma – the more aggressive of the two possibilities – and that he needed to start treatment immediately, an intervention that may have saved his life by just weeks.

It was decided he would undergo treatment with the assumption he had mediastinal B-cell lymphoma, and would need infusions five days per month. Because the mass was blocking too much of the vein in the area, a femoral PICC line was required. But then a new biopsy revealed relatively positive news – he actually had Hodgkin lymphoma and would be switched over to a new chemotherapy schedule. However, his doctors told him it would be in his best interest to find an oncologist in the Dallas-Fort Worth area.

John received his first chemotherapy treatments at MD Anderson. Luckily, his treating oncologist was familiar with Farrukh Awan, M.D., a Professor in the Department of Internal Medicine at UT Southwestern Medical Center, who would continue his treatments and then refer him for radiation therapy.

That referral introduced him to Kiran Kumar, M.D., M.B.A., Chief of Lymphoma and Pediatrics Radiation Oncology Services at UT Southwestern. A specialist in the treatment of pediatric, lymphoma, and central nervous system cancers using the most up-to-date techniques and therapies, Dr. Kumar began administering radiation treatments to John.

John had multiple sites of disease, including “bulky disease” in his anterior mediastinum. According to Dr. Kumar, the main concern was the toxicity of both the chemotherapy and radiation. Being located in front of the heart, this would be a risky area for radiation treatment and would require a technique to reduce direct exposure.

"One of the main long-term toxicities we see in young adults with Hodgkin lymphoma is increased cardiovascular risk," Dr. Kumar says. "Historically, when you give radiation to this area the heart is unavoidable – even a low dose goes to a lot of the heart with its proximity. With a breath-hold technique aided by surface-guided radiation therapy (SGRT), we were able to dramatically reduce his risk of long-term cardiovascular disease."

SGRT is a technique in UTSW's Department of Radiation Oncology largely used for breast patients. It is a tool to help set patients up on the treatment table with submillimeter accuracy and coaches them to perform reliable breath-holds with the use of visible and near-infrared light; these measurements are maintained for each recurring treatment. These efforts are being led by David Parsons, Ph.D., Assistant Professor, and are being expanded to other sites such as lymphoma.

After meeting with Dr. Kumar, John says his ultimate goal was disease-free survival. He is also currently part of a non-UTSW, ongoing Canadian study comparing drummers and their energy expenditure to high-level professional athletes, tracking calories burned and heart rate data, and he hopes to get back into physical drumming shape.

"I found Dr. Kumar and his team very affable and friendly," John says. "He told me radiation is highly effective against lymphoma and that he had the confidence to bring it down to around 5% exposure, which was a low enough number I was comfortable with."

At the time, John had planned on moving to the Czech Republic, but there was a delay with his visa, so he was able to receive full course of treatment. He says the treatments were nerve-racking more than anything else and the constant reminder of the consequences of radiation hitting his heart was enough motivation to get him through them with relative ease.

John has had no disease recurrence for nearly two-and-a-half years and has had no long-term side effects from the radiation. He continues to visit his local oncologist yearly and has recently been upgraded to a low-risk patient.

Today, John is working to get back to a healthy lifestyle in Prague, where he moved more than a year and a half ago. He recently started a job as a paralegal at a software company and teaches drumming lessons to seven students weekly. He says he still drums three to four days a week and is working on three different projects at the moment.

"I don't like to use the term survivor, but I do feel like I'm starting to return," he says. "It definitely stays in the back of your mind, but I feel better. It's been an incentive to do more that I've wanted to do, and I'm just enjoying drumming, teaching, and continuing to remain active."

Kiran Kumar, M.D., M.B.A.
Assistant Professor;
David Parsons, Ph.D.
Assistant Professor

Patient Spotlight: **Felecha Lynch**

By Ryan Daugherty

Felecha Lynch, 62, was born and raised in Oklahoma City to Ellis and Faye Johnson in a Christian faith-based household. Both her father, Ellis, an entrepreneur and construction worker, and her mother, Faye, a worker in the food industry and the Oklahoma Juvenile Detention Center, played pivotal roles in shaping her into the woman she is today. She and her seven siblings were raised to firmly believe in God's word.

As a senior approaching high school graduation, Felecha accepted a job through her school job program with a Black woman who owned her own construction company, an opportunity she attributes to her later career success. Looking back, she believes the seed was already planted through her father's dreams and entrepreneurial spirit.

"I have always acknowledged that God gave me all my gifts," she says. "I truly believe that he used this particular person and opportunity as an avenue to lead me into business and entrepreneurship because under her mentorship and guidance I thrived and found my niche."

Forty years ago, Felecha moved to Texas, where she and her husband of 38 years, Terry, have maintained the same strong faith-based household for their two daughters, Fredricka and Terri, as well as their grandson, Dakohta. She pursued a career in fashion and design and attended The Art Institute of Dallas, where she discovered her passion for interior decorating. Over the years she has run multiple businesses in fashion and art and continues to run her own interior-decorating business.

In August 2022, Felecha received some concerning news after a routine mammogram. A return visit for what was described as a shadow on her left breast meant a biopsy was required, though the explained process was extremely discomforting for her. After considering her options, she decided to get a second opinion elsewhere. Her primary care physician referred her to Phil Evans,

Felecha next to her pink-decorated Christmas tree.

M.D., Professor of Radiology and Chief of Breast Imaging at UT Southwestern Medical Center, who would perform the necessary biopsy.

"Dr. Evans was a blessing; he was basically like a grandfather to me," Felecha says. "He took away every bit of nervousness I had to the point where I wasn't even focused on the potential lump. I personally believe I was healed from the time I received the news, but knew I had to go through the process."

The biopsy revealed Felecha had stage 1 breast cancer. Her next step was connecting with Marilyn Leitch, M.D., one of the nation's top surgical oncologists and the S.T. Harris Family Distinguished Chair in Breast Surgery. Dr. Leitch removed the lump and three lymph nodes under Felecha's arm, all of which were benign.

After nearly a month of healing, Felecha would go to UT Southwestern's Department of Radiation Oncology to be treated by breast radiation oncologist Mona Arbab, M.D., M.Ed., Assistant Professor.

"She was wonderful and was actually the second person to tell me I was healed," Felecha says about Dr. Arbab. "I just remember her beautiful spirit, and it was an indication that God had set me up with the best team."

Dr. Arbab explained that Felecha had a hormone-positive tumor and that she would receive 19 fractions of radiation over a month in addition to hormone-blocker pills. As a patient with a left-side lesion, she would need to perform a breath-hold to spare her heart from as much radiation as possible. The technique, surface-guided radiation therapy (SGRT), helps with the setup of patients on the treatment table quickly and accurately with submillimeter accuracy. The machines utilized during this process are attached to the ceiling in the treatment room and administer visible and near-infrared light to guide the patient's breath-hold on the treatment table.

Additionally, SGRT is an important tool for helping patients with breath-hold, specifically breast patients. When patients take deep breaths and hold them in, their anatomy changes and the heart moves downward and away from the breast. With SGRT this can be monitored, allowing radiation beams to deliver a lesser dose to or near the heart. The excursion of the chest wall moving up or down can be seen during breath-holds, and those measurements can be maintained for each recurring treatment.

David Parsons, Ph.D., an Assistant Professor and expert in the state for surface guidance, led the installation of SGRT in the department. While patient positioning has been the primary benefactor so far, the technology is starting to be used for two other avenues, according to Dr. Parsons.

"We have recently started using SGRT during simulation with the same technology, which helps coach patients to perform reliable deep inspiration breath-holds," he says. "Our most recent use, clearance mapping, is a software that allows us to capture the patient's surface and immobilization equipment and see any potential collisions for the patient during treatment planning – in other words, if the beams and table positions chosen clear the patient."

Treatments were smooth, side effects were minimal to none, and Felecha recalls her daily experiences in the department as "exceptional" and "phenomenal," which started and ended with the staff in its entirety. She notes that having a staff that is empathetic with what patients are going through is an aspect of care that shouldn't be overlooked.

Nearly six months after her treatment Felecha says she is healed not just in her body but also in her spirit and mind. She wants to give back and be an inspiration to other patients going through a similar journey as hers. For her, this has involved partnering with UT Southwestern and leading a support group of prayer and encouragement as well as delivering care packages around different hospitals.

This past Christmas, Felecha decorated a tree with only pink ornaments to symbolically express her support of all women in their healing process. She also hopes to put her interior-decorating skills to use in both the Radiation Oncology Building and Harold C. Simmons Comprehensive Cancer Center by decorating trees on each floor as a symbol of life, strength, and longevity for patients needing inspiration during tough times.

"When undergoing my treatments, I was amazed at how many people were suffering through cancer and telling me their stories," she says. "God has led me to pray for others, and I've seen the results of that faith. I'd like to encourage people to hold on to faith and hope and to trust God and His word and to understand, believe, and receive the benefits of what Jesus Christ has done for us on the cross."

Mona Arbab, M.D., M.Ed.
Assistant Professor;
David Parsons, Ph.D.
Assistant Professor


Andrew Godley, Ph.D.
Radiation Oncology
DELL
Microsoft

Clinical Trial:
Vision RT-based DIBH Respiratory Motion Management Strategy

By Sepeadeh Radpour

STU 022017-075: Vision RT-Based Deep Inspiration Breath-hold (DIBH) Respiratory Motion Management Strategy, A Pilot Study for Thoracic and Abdominal Tumors Stereotactic Body Radiotherapy (SBRT) – Short title: VRT-DIBH for Thoracic and Abdominal Cancer SBRT

- **Condition**: Thoracic or abdominal cancer patients receiving SBRT
- **Treatment**: Vision RT-based deep inspiration breath-hold (VRT-DIBH)
- **Potential Benefit**: Show feasibility of this method for lung and liver SBRT patients, ultimately reducing toxicity and increasing patient quality of life, especially during treatment.

When administering radiotherapy, respiratory motion is a significant factor that clinicians integrate into their planning. This is especially important in abdominal and thoracic cancer patients, particularly those receiving SBRT, a treatment modality that reduces dose fractions while increasing potency. Lung and liver tumor positioning is often affected by respiration, which must be combated by planning for an increased treatment volume. This can result in increased toxicity for the patient.

Multiple methods have been developed to account for respiratory motion and resulting organ movement, with the current standard of care having the patient use a deep inspiration breath-hold (DIBH) technique using the Active Breathing Coordinator (ABC) system. This method involves the patient holding their breath at a predetermined level for a short period of time while using a digital spirometer. A small clamp is also placed on the patient's nose to maintain air volume. This ABC method does not involve real-time imaging, so DIBH positioning could be incorrect, and it can also be unpleasant for the patient due to unnecessarily strict breathing constraints.

To ameliorate this problem, a new clinical trial at UT Southwestern led by David Parsons, Ph.D., Assistant Professor, is investigating a method of DIBH that is more comfortable for the patient as well as more efficient and accurate for clinicians. This method uses a real-time imaging system, AlignRT manufactured by Vision RT, which tracks patient surface motion. Using this system, the clinician can select the targeted radiation area, and Vision RT will notify the clinician that the patient has achieved the DIBH position. Once the patient achieves the correct DIBH positioning, radiation treatment starts.

"If you switch to surface-guided for motion monitoring versus ABC, the situation is back in the patient's hands and feels like a voluntary experience. ABC is not always the most pleasant patient experience," Dr. Parsons says. "Additionally, without external monitoring, ABC can also be a black box in which you don't know if the DIBH and target position is correct. The combination of these two makes surface-guidance an exciting potential solution. We think we can provide patients with a much more reproducible and comfortable experience with this method as we have found it to be more efficient."

This trial will enroll 10 patients with thoracic or abdominal cancer receiving SBRT and have them participate in a VRT-DIBH treatment workflow. Descriptive statistics will investigate this method's feasibility at the end of the trial, with future directions including implementation in the pancreatic cancer space.

"The hope is to see voluntary breath-holds in a comfortable environment with real time for the feedback for the clinical team and patient," Dr. Parsons says. "Our ultimate goal is to change the standard of care for a better patient experience."

David Parsons, Ph.D.
Assistant Professor

+ Big Data Initiative: **Optimizing Data That is AI-Driven for Patient Treatments**

By Mary Whitmore

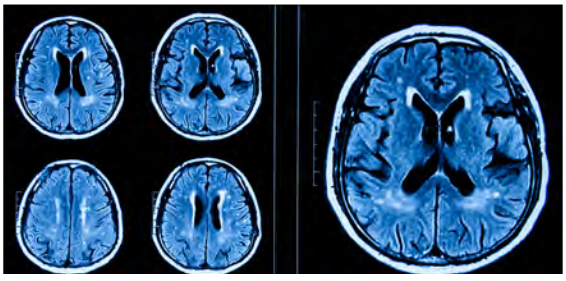
What if a patient had a difficult tumor to manage and it affected the normal tissues?

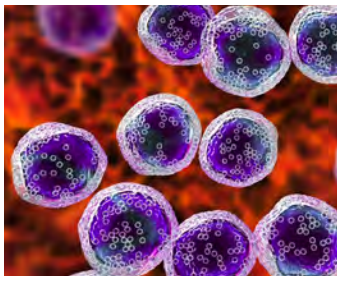
UT Southwestern's Department of Radiation Oncology has the largest adaptive therapy technology, including MR-linacs, and has introduced personalized ultra-fractionated stereotactic adaptive radiation therapy (PULSAR™) to provide precision care to patients where we can have minimum effect on their normal tissues. To improve radiotherapy outcomes for patients, including CT- and MR-based adaptive radiotherapy, biologically guided adaptive radiotherapy, and AI-driven adaptive radiotherapy, we need data on patients to conduct randomized and registry studies.

The Department of Radiation Oncology is embarking on a novel approach to collect that data. The initiative involves reflexively collecting clinical data for patients with the goal of electing a unique therapy for each unique patient (personalization) by:

1. Using technology to detect the ever-changing biology of a specific patient's cancer
2. Defining new directives in response to these changes

Initially, we will collect patient-derived biomarkers and patient-specific features, including imaging, blood, pathology, molecular testing, and tumor. With the large amounts of data coming from a variety of





Three Attractions to PULSAR

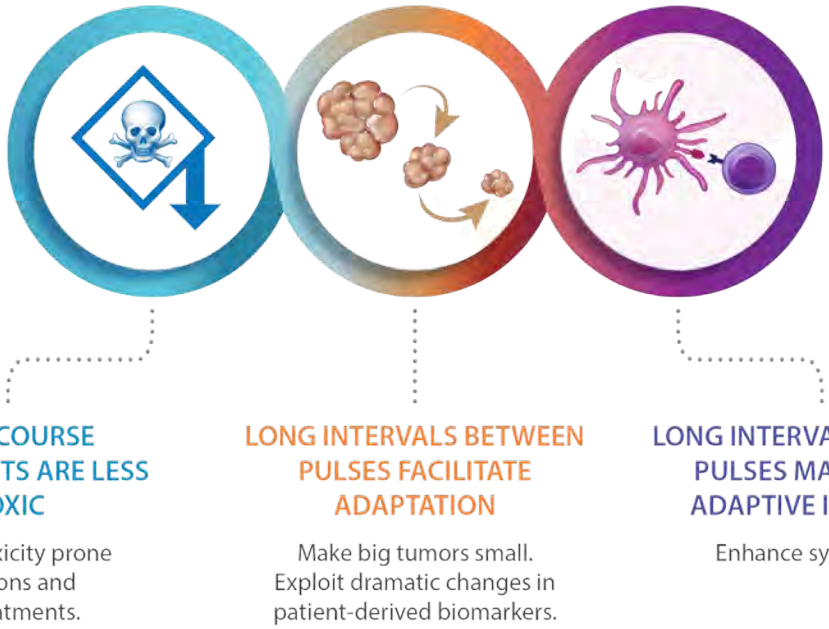


Illustration by Townsend Majors.

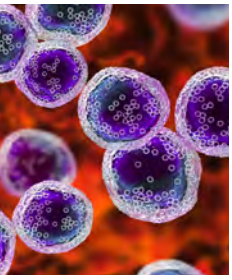
sources, it is crucial to sort and store it in a data lake where it can be processed using genomics or other types of sequencing.

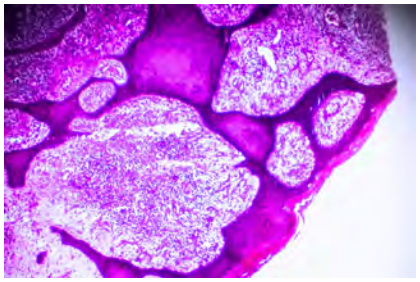
"Databases have been created in which we will be able to store vital information about how a patient with a certain diagnosis is or isn't progressing. We aim to learn along the way how fast and how much treatments change and whether we should consider alternatives. To that end, we expect artificial intelligence to have a large role. Not only will AI help us mine information from the patient through biopsies, blood work, and imaging—and analyze it to a form that can be more easily understood—but it will also help us understand if a patient is on a trend to success or a problem if we do not change their course of treatment," says Robert Timmerman, Chair and Professor of Radiation Oncology.

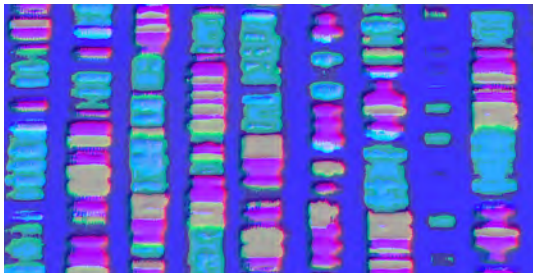
With data analysis derived from functional imaging and biology, the Big Data Initiative will ultimately allow us to carry out novel clinical trials with the intent of changing the standard of care internationally. It also opens the possibility for AI to run predictive models for personalized therapy, including:

- Measuring biological prognostic changes along the way and reacting to functional imaging and biology in real time
- Exploring a "mosaic" of information
- Defining a hypothesis in reaction to mechanistic understanding
- Conducting predictive analyses
- Using the clinic as part of the lab

Robert Timmerman, M.D.
Professor and Department Chair







Basic Research:

Paving the Way Toward Precise Radiation Oncology in Breast Cancer Patients

By Sepeadeh Radpour

By studying how tumor biology impacts response to radiation therapy, Prasanna Alluri, M.D., Ph.D., Assistant Professor, and his research team are opening new avenues for personalizing radiation treatments for breast cancer patients.

Patients with localized breast cancer are typically treated with a systemic therapy such as hormone therapy or chemotherapy, surgery, and radiation therapy. The goal of radiation therapy in these patients is to eliminate any residual microscopic cancer in the breast and, in some cases, lymph nodes. Because radiation therapy is administered after the tumor in the breast has already been removed by surgery, assessing how each patient responds to radiation therapy is difficult. Consequently, radiation treatments in breast cancer patients are often delivered in a one-size-fits-all manner. Thus, patients with a similar stage of disease receive the same intensity and duration of treatment, even though they may exhibit wide variation in their response to radiation therapy.

In this work, which was recently published in *NPJ Precision Oncology*, Dr. Alluri and his group use pre-clinical models to show that the response of estrogen-receptor-positive (ER+) breast cancer to preoperative hormone therapy predicts response to radiation therapy. Thus, tumors that have undergone adaptations that make them unresponsive to hormone therapy also render them resistant to radiation treatments.

In their previous study, Dr. Alluri and his team showed that resistance to hormone therapy in ER+ positive breast cancer is mediated by BRD4, a bromodomain and extraterminal domain (BET) family protein, and that a small molecule BET inhibitor, OTX014, reverses resistance to hormone therapy. Findings for the current study show that BRD4 also mediates radiation resistance in ER+ breast cancer and that OTX015 reverses radiation resistance in these tumors. These findings could enable identification of patients who may be at higher risk of recurrence with existing treatments and support combining radiation with a BET inhibitor to reduce their recurrence risk.

“While these preclinical findings need further validation in future clinical trials, they provide a framework for developing personalized radiation treatments for ER+ breast cancer patients based on their response to hormone therapy,” Dr. Alluri says. “The fact that an experimental drug that reversed hormone therapy resistance also overcame radiation resistance in breast cancer is very exciting.”

The findings from the study and future research in this area will contribute toward the mission of the department to develop personalized radiation treatments for cancer patients.

This study was supported by a grant to Dr. Alluri from the Department of Defense’s Breast Cancer Research Program.

Prasanna Alluri, M.D., Ph.D.
Assistant Professor

New Faculty **Q&A**

Xin Cai, M.D., Ph.D., Assistant Professor

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

Medicine offers unique insight into human biology and physiology that no other types of study in the lab can offer. As someone who strives to better understand human biology through research and patient care, I have a strong interest in oncology. Radiation oncology uniquely combines the breadth and depth of clinical oncology training with a strong emphasis on research through the ABR Holman Research Pathway.

Why did you choose UT Southwestern?

UT Southwestern combines world-class patient care with transformative basic scientific research and is an ideal place for physician-scientists. The Department of Radiation Oncology, in particular, has a strong track record of supporting physician-scientists by giving them the freedom to explore their curiosity. Having trained at UTSW for my M.D. and Ph.D., I'm excited to contribute to the institution and the department's clinical and research efforts.

What are some of your research interests?

Cancer is a disease of unlimited cell proliferation, and all proliferating cells require nutrients to grow and divide. My research focuses on how cancer cells alter their metabolism to enable themselves to proliferate indefinitely. Surprisingly, most cancer cells do not use new signaling pathways to increase their growth and nutrient uptake, but rather rely on hijacking preexisting, physiological pathways that once existed during normal growth and development. My lab is particularly interested in understanding metabolic pathways under normal settings in order to offer insight into how these pathways are hijacked in cancer.

Xin Cai, M.D., Ph.D., Assistant Professor

Hao Peng, Ph.D., Professor

Hao Peng, Ph.D., Professor

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

During my undergraduate study in physics, I realized how special the fields of radiation oncology and medical physics were compared to other research fields. Radiation oncology is a unique combination of science, technology, and patient care, offering both challenging and rewarding career paths. Scientific discovery and technical innovation across the globe bring us health care in a more personalized, precise, and affordable way. In particular, these factors have a profound impact on cancer care. As a researcher, it is gratifying to be part of a team of highly motivated intellectuals who strive to tackle unmet medical needs. As a team, we learn from each other, test new ideas, and disseminate research findings to the wider community. On the clinical side, I appreciate the close bond built between the physician, patient, and their family during the treatment.

Why did you choose UT Southwestern?

The department is internationally recognized for excellence in clinical care, scientific research, and residency programs. I am in the Division of Medical Physics and Engineering, which provides a very strong research platform in radiotherapy. It is host to a number of state-of-the-art clinical facilities (e.g., MR-linac, PET-linac, CyberKnife, Gamma Knife). In addition, we carry out numerous cutting-edge research projects in the fields of artificial intelligence (AI), medical imaging technologies, and ultra-high-dose radiotherapy (FLASH). I am enthusiastic about contributing to the PULSAR™ (personalized ultra-fractionated stereotactic adaptive radiation therapy) project led by Dr. Robert Timmerman, and the AI-powered adaptive radiotherapy project led by Dr. Steve Jiang. The team at UTSW has a long tradition of thinking outside the box: identifying a problem down to its core components and addressing those core components with creative solutions. Moreover, the workplace and team at UTSW are quite diverse. I previously worked in several countries, including Canada, Japan, China, as well as other parts of the U.S., so I really value that aspect.

What are some of your research interests?

My research interests include AI, particle therapy, PET imaging, FLASH, and PULSAR. In my opinion, the need for adaptation in particle therapy is critical to fully evince its dosimetric advantage and improved treatment efficacy over other modalities. Any deviation from the initial treatment plan, either beam- or patient-related, will result in dose-delivery inconsistencies and consequently compromise treatment efficacy. My research aims to form a closed loop in the adaptive workflow by addressing several critical challenges, including fast dose calculation, fast plan optimization, and online dose verification. In the long term, I strongly believe that conjoining PULSAR with AI will be a paradigm shift in radiation oncology, enabling truly adaptive radiation therapy strategies.

Da Wang, Ph.D., Assistant Professor

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

My undergraduate major was physics. When I faced the crossroads of future careers for advancement, I could choose only between cosmic physics or quantum physics. I decided to follow my heart and go into the field of medical physics and radiation oncology. When I look retrospectively, after all these years I know that decision was in my best interest. Having such a strong interest gives me the fuel to always go the extra mile – to continuously learn and perfect my understanding of radiation physics and come up with out-of-the-box solutions to better serve cancer patients.

Why did you choose UT Southwestern?

I chose UTSW because the institution puts great emphasis on conducting pioneering clinical trials, which often blend with advanced technologies. This advances cancer therapy to be personalized with improved patient care and better outcomes.

Da Wang, Ph.D., Assistant Professor

Fan Chi "Frances" Su, Ph.D., Associate Professor

What are your research interests?

My research interests include auto-contouring, contour evaluations, adaptive treatment planning, and same-day sim and treatments to improve quality of care for SAbR patients.

Fan Chi "Frances" Su, Ph.D., Associate Professor

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

I always had an interest in the human body and its mechanisms, but it wasn't until my mother became a cancer survivor that my fascination was given purpose. I made the commitment to specialize in medical physics and radiological sciences so that I could use my knowledge to help those facing this difficult journey. My ultimate goal is to improve the quality of care and treatment that cancer patients receive.

Why did you choose UT Southwestern?

What drew me to UT Southwestern was its collaborative and welcoming atmosphere. UT Southwestern is an excellent place for career development, offering abundant research opportunities, cutting-edge hardware due to well-funded and financially planned investments, and a supportive community among the faculty, trainees, and students. I am thrilled to be part of UT Southwestern's innovative culture and look forward to working together with my peers in making progress in our field.

What do you like most about your job?

I enjoy the challenge of problem-solving in real time, often with a time constraint, in the clinical environment. Working as part of a wonderful care team is always rewarding, and I'm excited to continue working with the UT Southwestern Medical Center team to provide outstanding patient care.

Graduating Medical Residents

Sean All, M.D.
Medical School: University of Central Florida
Practicing: Vanderbilt University Medical Center

Michael Dohopolski, M.D.
Medical School: University of Pittsburgh
Practicing: UT Southwestern Medical Center

Salman Eraj, M.D.
Medical School: UT Health Science Center Houston
Practicing: City of Hope Atlanta

Sujana Gottumukkala, M.D., M.P.H.
Medical School: UT Southwestern Medical School
Practicing: Spectrum Healthcare Radiation Oncology

Graduating Physics Residents

Yesenia Gonzalez, Ph.D.
Ph.D.: UT Southwestern Medical Center
Practicing: UT Southwestern Medical Center

Boyu Meng, Ph.D.
Ph.D.: Dartmouth College
Practicing: University of California San Diego

Chenyang Shen, Ph.D.
Ph.D.: Hong Kong Baptist University
Practicing: UT Southwestern Medical Center

Justin Visak, Ph.D.
Ph.D.: University of Kentucky
Practicing: UT Southwestern Medical Center

Incoming Medical Residents

Yu Shao, M.D., Ph.D.
Harvard Medical School

Yash Soni, M.D.
University of Miami

Brett Tortelli, M.D., Ph.D.
Washington University in St. Louis

Incoming Physics Residents

Ti Bai, Ph.D.
Xi'an Jiaotong University, China

Mary Gronberg, Ph.D. candidate
MD Anderson Cancer Center

Xiao Liang, Ph.D.
UT Southwestern Medical Center

Brien Washington, Ph.D. candidate
University of Kentucky

Awards & Recognition

Prasanna Alluri, M.D., Ph.D., Assistant Professor and part of our breast disease-oriented team, received the METAvivor Metastatic Breast Cancer Translational Research Award. This $250,000 grant will support his work on developing new strategies to overcome CDK4/6 inhibitor resistance. METAvivor, founded by a group of metastatic breast cancer (MBC) patients, is dedicated to sustaining hope for people living with stage 4 MBC and funding research.

Dominic Moon, M.D., Assistant Professor and part of our head and neck disease-oriented team, was awarded an early-stage research grant from Southwestern Medical Foundation's The Cary Council for his research that aims to tailor head and neck cancer treatment regimens to each specific patient based on a blood test he's working to develop.

Yuanyuan "Faith" Zhang, M.D., Ph.D., Assistant Professor and part of our lung disease-oriented team, was selected as a Forbeck Scholar. Dr. Zhang also received a 2022 SPORE Career Enhancement Program Award for her lung cancer research investigating ways to improve radiation response rates for patients receiving radiotherapy each year.

Michael Dohopolski, M.D., Chief Resident in our medical residency program, has been chosen as one of UT Southwestern Medical Center's first Dean's Scholar in Clinical Research awardees.

Salman Eraj, M.D., Chief Resident in our medical residency program, received the Radiology Associates of North Texas - James M. Moorefield Fellowship in Economics & Health Policy through the Texas Radiological Society.

Maureen Aliru, M.D., Ph.D., a second-year medical resident in our department, was selected as a participant of the B. Leonard Holman Research Pathway.

Meng-Lun Hsieh, Ph.D., D.O., and **Joseph Kwon**, M.D., both medical residents in our department, received 2023 Novocure Travel Grants for the 2023 Radiation Oncology Summit ACRO Meeting in Orlando.

+ New Appointments

Neil Desai, M.D., M.H.S.
Director of Clinical Research

Aurelie Garant, M.D.
Director of the Brachytherapy Program

OUR **CLINICAL PROVIDERS**

Todd Aguilera, M.D., Ph.D.
Assistant Professor

Kevin Albuquerque, M.D., FACR
Professor and Director of Radiation Oncology Accreditation
Chief of Gynecological Radiation Oncology Service
Holder of the Ken Sharma Professorship in Radiation Oncology

Prasanna Alluri, M.D., Ph.D.
Assistant Professor

Mona Arbab, M.D., M.Ed.
Assistant Professor

Vladimir Avkshtol, M.D.
Assistant Professor

Shohreh Bahrami, APRN, FNP-BC
Advanced Practice Nurse

Xin Cai, M.D., Ph.D.
Assistant Professor

Tu Dan, M.D.
Assistant Professor

Neil Desai, M.D., M.H.S.
Associate Professor and Director of Clinical Research
Dedman Family Scholar in Clinical Care

Tamara Dickinson, M.S.N., APRN, AGPCNP-BC, CURN, CCCN
Advanced Practice Nurse

Aurelie Garant, M.D.
Assistant Professor and Director of the Brachytherapy Program

Anundip Gill, M.S.N., APRN, FNP-C
Advanced Practice Nurse

Daniella Hall, PA-C
Physician Assistant

Raquibul Hannan, M.D., Ph.D.
Professor
Chief of Genitourinary Radiation Oncology Service

Puneeth Iyengar, M.D., Ph.D.
Associate Professor and Vice Chair, Strategy & Program Development
Chief of Lung Radiation Oncology Service

Terri Kelley-Griffis, APRN, FNP-C
Advanced Practice Nurse

Kanchandip Koshy, M.S.N., APRN, FNP-C
Advanced Practice Nurse

Margaret Kozak, M.D.
Assistant Professor

Kiran Kumar, M.D., M.B.A.
Assistant Professor and Program Director of the Medical Residency
Chief of Lymphoma and Pediatrics Radiation Oncology Services

Xingzhe "Dillon" Li, M.D., M.P.H.
Assistant Professor

Astrid Medrano, M.S.N., APRN, FNP-C
Advanced Practice Nurse

Dominic Moon, M.D.
Assistant Professor

Chika Nwachukwu, M.D., Ph.D.
Assistant Professor and Associate Program Director of the Medical Residency
Eugene P. Frenkel, M.D., Clinical Scholar

Asal Rahimi, M.D., M.S.
Associate Professor and Medical Director of the SCCC Clinical Research Office
Chief of Breast Radiation Oncology Service
Department Associate Vice Chair of Diversity, Equity, and Inclusion

Shay Rezaie, M.S.N., APRN, FNP-C, OCN
Advanced Practice Nurse

Nina Sanford, M.D.
Assistant Professor
Chief of Gastrointestinal Radiation Oncology Service
Dedman Family Scholar in Clinical Care

Amy Sessions, M.P.A.S., PA-C
Physician Assistant

David Sher, M.D., M.P.H.
Professor, Vice Chair, and Medical Director for Clinical Operations and Quality
Chief of Head and Neck Radiation Oncology Service

Matthew Strunk, M.P.A.S., PA-C
Physician Assistant

Robert Timmerman, M.D., FASTRO, FACR
Professor and Chair
Holder of the Effie Marie Cain Distinguished Chair in Cancer Therapy Research

Dat Vo, M.D., Ph.D.
Assistant Professor

Andrew Wang, M.D.
Professor and Vice Chair, Translational Research & Commercialization
Holder of the A. Kenneth Pye Professorship in Cancer Research

Zabi Wardak, M.D.
Associate Professor and Medical Director of the Gamma Knife Program
Chief of Central Nervous System Radiation Oncology Service

Kenneth Westover, M.D., Ph.D.
Associate Professor and Director of Clinical Innovation

Daniel Yang, M.D.
Assistant Professor

Yuanyuan "Faith" Zhang, M.D., Ph.D.
Assistant Professor

UT Southwestern
Harold C. Simmons
Comprehensive Cancer Center

NCI Designated Comprehensive Cancer Center

Department of Radiation Oncology

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Photos by Brian Coats and Ryan Daugherty

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