

Tumor Measurement Initiative Symposium 2025

Please Join Us

LOCATION:

**MD Anderson Mid-Campus Building 1
3rd Floor, Rooms 3-8
7007 Bertner Ave, Houston, TX 77030**

...or join us virtually via Zoom

At our 2025 Tumor Measurement Initiative (TMI) Symposium, we are excited to bring together MD Anderson faculty and staff to highlight the work achieved through TMI towards generating automated, quantitative measurements from tumor and normal tissues.

We look forward to a dynamic discussion with the community to:

- Identify growing applications for already developed tools.
- Explore new opportunities that TMI can support.
- Discover the tools and processes available for supporting data quality and management.
- Learn about some of the complexities in clinically deploying AI models.

This event is offered at no charge and is open to all MD Anderson staff and the public. Advance registration is required.

THE UNIVERSITY OF TEXAS

**MDAnderson
Cancer Center**

Making Cancer History®



Thursday, April 3, 2025
[Register here](#)

2025 Invited Speakers



Dan Shoenal, M.S.,
Vice President and
Chief Innovation
Officer



Mark Daly, B.S.,
Chief Technology Officer,
Digital Diagnostics



Shawn Stapleton,
Ph.D., Director, Model
Impl and Life Cycle
Mgmt



Joshua Yung, Ph.D.,
Associate Professor,
Imaging Physics



Kai Zhang,
Ph.D., Sr. Research
Scientist



Tucker Netherton,
Ph.D., Assistant Professor,
Radiation Physics-
Research – Patient Care



McKell Woodland,
Ph.D., Data Scientist



Jessica Albuquerque,
M.D., Postdoctoral
Fellow



Hugo Miniere,
B.S., M.S.,
Graduate Student,
UT Health in Austin



**Rukhmini
Bandyopadhyay, Ph.D.**
Postdoctoral Fellow



Raji Muthusivarajan,
Ph.D., Postdoctoral
Fellow



Mohamed Eltaher,
M.D., Research
Assistant II

Program Leadership

Caroline Chung, M.D., M.Sc.

Brett Carter, M.D., CPE, CPPS

Program Sponsors

Liz Burton, Ph.D.

David Jaffray, B.Sc.,
Ph.D.

Andy Futreal,
B.S., Ph.D.

Tumor Measurement Initiative

Symposium 2025

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Daniel Shoenthal, M.S.



Dan Shoenthal is the Vice President and Chief Innovation Officer at The University of Texas MD Anderson Cancer Center. Dan earned his Master's degree in Information Systems Management and Bachelor's degree in Business Administration from Robert Morris University. Here at MD Anderson, Dan has a proven track record of maneuvering the complexities of innovation to generate impact. Dan has led the creation of innovative health care experiences and technology in collaboration with team members across the organization to bring novel approaches to all aspects of realizing our mission to end cancer. Dan's versatile mix of technical and management skills helps him maintain a global perspective and to foresee obstacles and opportunities for the institution. Before joining MD Anderson, Dan was the Senior Director of Product Management at the University of Pittsburgh Medical Center's (UPMC) Technology Development Center and UPMC Enterprises. As part of the leadership team, he was responsible for creating product strategies across the entire payer/provider continuum and developed a vast portfolio of digital technology investments and new companies that over the years created lasting impact.

Mark Daly, B.S.



Mark Daly is the Chief Technology Officer at Digital Diagnostics where he oversees the engineering, IT, R&D, Product and Program Management Teams. Prior to Digital Diagnostics, Mark worked at Philips, where he successfully integrated startups and led teams to achieve significant growth targets in diagnostic imaging. Mark's expertise spans more than 20 years with expertise managing critical patient care systems at the University of Maryland Medical Center to co-founding Analytical Informatics, a successful health IT startup acquired by Philips. He has a strong technical foundation with a B.S. in Computer Engineering from the Milwaukee School of Engineering and has contributed significantly to product development, operations, and international market launches in his engineering and product leadership roles.

Shawn Stapleton, Ph.D.



Shawn Stapleton, Ph.D. is the Director of AI Lifecycle Management at The University of Texas MD Anderson Cancer Center, bringing over 20 years of academic and industry experience in radiology, oncology, and healthcare informatics. In this role, he leads the operationalization, validation, and maintenance of enterprise AI solutions across the institution, ensuring they are safe and achieve sustainable impact. Prior to joining MD Anderson, Dr. Stapleton spent almost a decade in industry guiding AI innovations from research through product de-risking and development at both Optum and Philips Healthcare. He earned his PhD at the University of Toronto, where he developed computational models to predict nanomedicine transport in solid tumors, followed by a postdoctoral fellowship at Mass General Hospital/Harvard Medical School focused on multiscale imaging and modeling of anti-cancer drug delivery.

Joshua Yung, Ph.D.



Joshua P. Yung, Ph.D., is an Associate Professor in the Department of Imaging Physics at the University of Texas MD Anderson Cancer Center in the section of magnetic resonance and ultrasound physics. Dr. Yung completed his Ph.D. in Medical Physics at the University of Texas Graduate School of Biomedical Sciences in Houston, Texas in 2014. His Ph.D. research focused on computational approaches for improving magnetic resonance temperature imaging for MR-guided thermal therapies. He currently practices medical physics with a focus on improving the magnetic resonance quality control program with automatic image processing and tracking longitudinal data trends. His research interest continues to lie in the development and use of magnetic resonance imaging for monitoring and verification of ablative therapies. His research aims to further improve the robustness of treatment monitoring and the overall safety and efficacy in MR-guided interventional procedures, using both quantitative data acquisition and processing methods with model-constrained approaches.

Tumor Measurement Initiative

Symposium 2025

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Hugo Miniere, B.S., M.S.



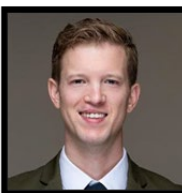
Hugo Miniere is a fifth-year Ph.D. student at the University of Texas Center for Computational Oncology working under Dr. Thomas Yankeelov. He has experience building computational platforms to capture and predict tumor growth in in vitro and in vivo environments by using experimental data and medical images to inform mathematical models. His latest work, in collaboration with Drs. Caroline Chung and T.J. Whitaker, focuses on optimizing the spatial delivery of radiation to high-grade glioma tumors by prescribing local dose boosts based on observed areas of tumor invasion during the course of treatment. Hugo has previously obtained a BS/MS in mechanical engineering from Arts et Metiers ParisTech in France, and an MS in biotechnology at Texas Tech University.

Kai Zhang, Ph.D.



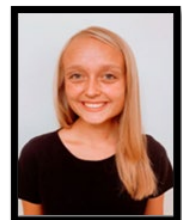
Dr. Zhang is a Sr. Research Scientist at The University of Texas MD Anderson Cancer Center. Prior to this he was a faculty member at UTHealth. He has an engineering background and holds a Ph.D. in Electrical Engineering and specializes in Artificial Intelligence for healthcare. His work focuses on predictive modeling, AI fairness, and multimodal learning, with a strong emphasis on real-world applications. Dr. Zhang is passionate about building transparent and interpretable AI tools that can enhance patient care and support healthcare professionals.

Tucker Netherton, Ph.D.



Dr. Tucker Netherton is an Assistant Professor in the Radiation Physics Department at The University of Texas MD Anderson Cancer Center. He received his Doctorate of Medical Physics degree and completed a clinical residency in therapeutic medical physics at Vanderbilt University in 2016. Pursuing further education, he entered the Ph.D. program at The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences with Dr. Laurence Court as his advisor. His early graduate work was centered around the commissioning of new external beam treatment devices. His thesis focused on applying machine and deep learning to vertebral body labeling and automatic treatment planning for spinal radiotherapy. In May of 2021, he became an Assistant Professor in the Radiation Physics Department at MD Anderson Cancer Center within the head and neck, lymphoma, melanoma, and sarcoma service. His research involves developing tools to 1) expedite clinical processes for automatic medical image segmentation of normal and cancerous tissues, 2) predict treatment planning errors that pose risks to patient care, and 3) aid decision making in radiotherapy treatment planning. He currently serves as a faculty researcher on the Radiation Planning Assistant team and specializes in applications of machine and deep learning to treatment planning and image segmentation. Tucker is passionate about research, clinical work and graduate education.

McKell Woodland, Ph.D.



McKell Woodland, Ph.D. is a Data Scientist at The University of Texas MD Anderson Cancer Center, where she researches safely integrating deep learning technologies into cancer care with out-of-distribution detection and generative modeling. She holds her PhD in Computer Science from Rice University and a BS in Applied Mathematics from Brigham Young University. She has published her research in venues such as the Machine Learning for Biomedical Imaging Journal and the Medical Image Computing and Computer Assisted Intervention Conference, where her out-of-distribution detection work won "Best Spotlight Paper" at an associated workshop.

Tumor Measurement Initiative Symposium 2025

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Jessica Albuquerque, M.D., M.S.



Jessica Albuquerque, M.D., is a radiologist trained at the National Institute of Cancer, Brazil, with a master's degree in Radiology, a fellowship in body imaging, and experience in hepatic oncologic imaging. She is currently a research fellow in Interventional Radiology at The University of Texas MD Anderson Cancer Center under the mentorship of Dr. Bruno C. Odisio. Her research focuses on minimally invasive therapies for hepatic malignancies, utilizing advanced software integrating AI-driven auto-segmentation and biomechanical deformable image registration to assess ablation margins.

Rukhmini Bandyopadhyay, Ph.D.



Rukhmini Bandyopadhyay, Ph.D., is a Postdoctoral Fellow at The University of Texas MD Anderson Cancer Center, specializing in machine learning, and computational pathology. Her research leverages advanced computational techniques to enhance cancer diagnosis and prognosis, with a particular focus on whole slide image analysis, model explainability, and integrating data across multi-modal platforms. With expertise in deep learning, data science, and image processing, she works closely with a multidisciplinary team to drive research that translates into tangible improvements in clinical outcomes. My work includes developing innovative models for handling imbalanced datasets and building frameworks to improve the interpretability of machine learning models in cancer research. She completed her Ph.D. at Jadavpur University, Kolkata, India, where she focused on lung cancer detection using CT scan images. She is passionate about advancing the field of computational oncology and contributing to the future of precision medicine.

Rajarajeswari Muthusivarajan, Ph.D.



Rajarajeswari (Raji) Muthusivarajan, Ph.D., is a post-doctoral researcher in the Department of Imaging Physics at the University of Texas MD Anderson Cancer Center. She holds a Ph.D. in Physics specializing in computational nanotechnology. Her research interests include machine learning, medical image segmentation, image registration, and molecular modeling. She initially joined as a T32 cancer nanotechnology post-doctoral fellow in Dr. David Fuentes' computational research laboratory team in Imaging Physics. Now she is working as a post-doctoral fellow supported by the MD Anderson Strategic Research Initiative Development (STRIDE) Program – Tumor Measurement Initiative (TMI). Her current research focuses on deep learning-based image segmentation for glioblastoma and predictive modeling to improve glioma prognosis. She has developed and implemented convolution neural network models for MRI skull stripping, brain tumor and resection cavity segmentations in gliomas. She has experience in MRI image processing and image registration techniques.

Mohamed Eltaher, M.D.



Mohamed Eltaher, M.D., is a medical graduate of Ain Shams University in Cairo, Egypt. He joined Dr. David Fuentes' computational research laboratory team in the Department of Imaging Physics at the University of Texas MD Anderson Cancer Center as a Research Assistant II two years ago to build a strong foundation in research before applying for his residency training program. His current research focuses on data curation, medical imaging segmentation, specifically different abdominal organs on CT and MRI scans. He also helps with grants and manuscripts preparation and writing. In his free time, he enjoys stargazing and learning more about far stars and galaxies.

Tumor Measurement Initiative Symposium 2025

April 3, 2025

7:30-8:15 AM	Check-In + Breakfast 1MC3, Rooms 3-8 (3rd floor)
	Welcome and Introductory Session
8:15	Opening Remarks Caroline Chung, M.D., M.Sc., FRCPC, CIP VP and Chief Data & Analytics Officer Director, Data Science Development & Implementation, Institute for Data Science in Oncology Professor, Radiation Oncology & Neuroradiology
8:25	Welcome David Jaffray, B.Sc., Ph.D. Sr. VP and Chief Technology and Digital Officer Director, Institute for Data Science in Oncology Professor, Radiation Physics and Imaging Physics
8:35	STRIDE (STRategic Research Initiative DEVELOPMENT) Liz Burton, Ph.D., Executive Director, STRIDE
8:45	Overview of the Institute for Data Science in Oncology (IDSO) and Tumor Measurement Initiative (TMI) Caroline Chung, M.D., M.Sc.
SESSION 1:	From Bench to Bedside and Back – Deploying AI Models at the Leading-Edge for Clinical Impact <i>The session highlights the common paths, challenges and progress made to develop, deliver and support AI models in the clinic</i> Moderator: Lee Andrews, PharmD, B.Sc.
9:00	Out of Distribution Detection (GAN Based Anomaly Detection), McKell Woodland, Ph.D.
9:20	Responsible AI: Developing Functional and Safe AI, Shawn Stapleton, Ph.D.
9:40	Human in the Loop: The Tricky Relationship between Humans and AI, Dan Shoenthal, M.S.
10:00	Translating AI to Practice, Mark Daly, B.S., CTO, Digital Diagnostics
10:20	Panel Discussion: Dan Shoenthal, M.S., Shawn Stapleton, Ph.D., Lawrence Court, Ph.D., Mark Daly, B.S., Dave Fuller, M.D., Ph.D.
10:40	Networking Break
SESSION 2:	Measuring and characterizing tumors in the brain – Progress, challenges, and future success <i>With brain tumor measurement as an exemplar, this session brings focus to the progress made, unique challenges and anticipated avenues to success for quantitative tumor imaging for the brain</i> Moderator: David Fuentes, Ph.D.

10:50	A Computational Platform for Systematically Adapting Radiation Therapy for High-Grade Gliomas, Hugo Miniere, Ph.D., University of Texas in Austin
11:10	MR Protocol / Image Parameter Heterogeneity with Large Clinical Datasets, Joshua Yung, Ph.D.
11:30	Brain Metastases Segmentation with MIST, Raji Muthusivarajan, Ph.D.
11:50	Panel Discussion: Olanrewaju Ogunkunle, D.Sc., David Hormuth, Ph.D., Jeffrey Weinberg, M.D., Leomar Ballester, M.D., Jing Li, M.D., Ph.D.
12:10	Lunch
SESSION 3:	Lung and Liver – Successes, Lessons, and Opportunities to Learn Across Domains <i>This unique session joins the perspectives of investigators advancing quantitative imaging for lung and liver to set the stage for an insightful discussion on unique aspects, common challenges and collective lessons learned when comparing these emerging tumor measurement areas.</i> Moderator: Brett Carter, M.D., CPPS
1:10	Genetic Determinants of Hepatocarcinogenesis: Does Genetic Background Affect Disease Outcome? Mohamed Eltaher, M.D.
1:30	Integration of AI-Based Automatic Segmentation in Liver Ablation: Clinical Experience and Impact on Treatment Planning, Jessica Albuquerque, M.D.
1:50	Training Robust T1-Weighted Magnetic Resonance Imaging Liver Segmentation Models Using Ensembles of Datasets with Different Contrast Protocols and Liver Disease Etiologies, Tucker Netherton, Ph.D.
2:10	Networking Break
2:20	Lung CT Foundation Modeling, Kai Zhang, Ph.D.
2:40	Lung Digital Pathology Analysis, Rukhmini Bandyopadhyay, Ph.D.
3:00	Panel Discussion: Sireesha Yedururi, M.B.B.S., Edwin Ostrin, M.D., Ph.D., Luisa Solis Soto, M.D., Natalie Vokes, M.D.
3:20	Networking Break
SESSION 4:	Team Data Science <i>This final panel brings researchers, clinicians and technology experts together to discuss collectively the importance of working together to make progress in advancing the frontier of quantitative tumor measurement</i> Moderator: Joshua Yung, Ph.D.
3:30	Panel Discussion: Giulio Draetta, M.D., Ph.D., Jeffrey Weinberg, M.D., David Hormuth, Ph.D., Heiko Enderling, Ph.D., Shawn Stapleton, Ph.D.
4:00	Closing Remarks David Jaffray, B.Sc., Ph.D.
4:15	Reception

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Directions:

The 2025 TMI Symposium will be hosted at the MD Anderson Mid-campus Building 1 (7007 Bertner Ave, Houston, TX 77030) on the 3rd floor. Parking is available in the adjacent parking garage (Daily rate: \$15). The skywalk to the building is on the 5th floor of the parking garage. This will take you to the 3rd floor of the MD Anderson Mid-campus Building 1. Please check in with the security guard at the end of the skywalk. Directions from the security desk to Rooms 3-8 will be available at the security desk.

For more information, please contact Tara Blaylock at tyblaylock@mdanderson.org.

