

ROBIN OligoMET Center

Monthly Research Update: January 2025

Publications

JANUARY AT A GLANCE TOTALS	
Publications	7
Grants and contracts	
New awards	0
Submitted	3
Oral Presentations	2
Abstracts	4
Clinical trials	
TERPS	6
Awards/Honors	0

Please submit all monthly updates to Jadyne Stewart at jadynstewart@som.umaryland.edu by second Wednesday of each month.

- Cao Y, Sutura P, Silva Mendes W, Yousefi B, Hrinivich T, Deek M, Phillips R, Song D, Kiess A, Cem Guler O, Torun N, Reyhan M, **Sawant A, Marchionni L, Simone NL, Tran P**, Onal C, **Ren L**. Machine learning predicts conventional imaging metastasis-free survival (MFS) for oligometastatic castration-sensitive prostate cancer (omCSPC) using prostate-specific membrane antigen (PSMA) PET radiomics. *Radiother Oncol*. 2024 Oct;199:110443. doi: 10.1016/j.radonc.2024.110443. Epub 2024 Jul 31. PMID: 39094629; PMCID: PMC11405100.
- Esquea EM, Young RG, Ciraku L, Merzy J, Ahmed NN, Talarico AN, Karuppiah M, Gocal W, **Simone NL**, Dick A, Reginato MJ. ACSS2 regulates ferroptosis in an E2F1-dependent manner in breast cancer brain metastatic cells. *bioRxiv* [Preprint]. 2024 Oct 21:2024.10.18.619082. doi: 10.1101/2024.10.18.619082. PMID: 39484430; PMCID: PMC11526985.
- LePore L, Kronfli D, Baker K, **Eggleston C**, Schotz K, Kleckner AS, Bentzen SM, Mohindra P, Vyfhuis MAL. Identifying Nutritional Inequities of Patients with Cancer Residing in Food Deserts. *Adv Radiat Oncol*. 2024 Nov 23;10(1):101641. doi: 10.1016/j.adro.2024.101641. PMID: 40017914; PMCID: PMC11867131.
- Ling X, Bazayr S, Ferris M, Molitoris J, Allor E, Thomas H, Arons D, Schumaker L, Krc R, Mendes WS, **Tran PT**, Sawant A, Mehra R, Gaykalova DA, Ren L. Identification of CT based radiomic biomarkers for progression free survival in head and neck squamous cell carcinoma. *Sci Rep*. 2025 Jan 8;15(1):1279. doi: 10.1038/s41598-025-85498-x. Erratum in: *Sci Rep*. 2025 Feb 21;15(1):6358. doi: 10.1038/s41598-025-90567-2. PMID: 39779914; PMCID: PMC11711663.
- Moradmand H, **Ren L**. Multistage deep learning methods for automating radiographic sharp score prediction in rheumatoid arthritis. *Sci Rep*. 2025 Jan 27;15(1):3391. doi: 10.1038/s41598-025-86073-0. PMID: 39870749; PMCID: PMC11772782.
- Naseer QA, Xuexian C, Yimai D, **Khan MA**, Chen S. Fragment-Based Drug Discovery of KIF11 Inhibitors for Glioblastoma Treatment: Molecular Insights and Therapeutic Potential. *Drug Res (Stuttg)*. 2025 Jan 22. doi: 10.1055/a-2512-9183. Epub ahead of print. PMID: 39842449.
- Wang JH, Deek MP, Mendes AA, Song Y, Shetty A, Bazayr S, Van der Eecken K, Chen E, Showalter TN, Royce TJ, Todorovic T, Huang HC, Houck SA, Yamashita R, Kiess AP, Song DY, Lotan T, DeWeese T, **Marchionni L, Ren L, Sawant A, Simone N**, Berlin A, Onal C, Esteva A, Feng FY, **Tran PT**, Sutura P, Ost P. Validation of an artificial intelligence-based prognostic biomarker in patients with oligometastatic Castration-Sensitive prostate cancer. *Radiother Oncol*. 2025 Jan;202:110618. doi: 10.1016/j.radonc.2024.110618. Epub 2024 Nov 6. PMID: 39510141; PMCID: PMC11663099.

Grants and Contracts

Funded:

- None reported

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Grants and Contracts

Submitted:

- **Lei Ren, PhD**, project 2 lead (overall GCCC SPORE submission), to NCI/NIDCR P50 SPORE (PAR-23-284) for project titled “Identifying imaging biomarkers and developing temporally adaptive multiomics AI models to predict outcomes and disparities in oral cancer” (\$1,525,663).
- **Phuoc Tran, MD, PhD**, PI/PD, on subaward with prime applicant NRG Oncology to NCI National Clinical Trials Network (RFA-CA-24-033) as Committee Vice Chair for NRG Oncology (\$90,000).
- **Phuoc Tran, MD, PhD**, PI/PD, on subaward with prime applicant University of Arkansas to NCI National Clinical Trials Network (RFA-CA-24-033) for “Pilot study: Validation of a Multimodal Artificial Intelligence Biomarker in the NRG GU006 Trial in Post-Operative Prostate Cancer” (\$777,500).

Oral Presentations

- **Phuoc. T.**, University of Maryland 20th Annual Radiation Oncology Symposium – Best of 2024 (January 9, 2025 – Baltimore, MD). “Genitourinary – Best of 2024”.
- **Phuoc. T.**, Lurie Cancer Center of Northwestern University, Basic Science Research Seminar Series (January 21, 2025 – Chicago, IL). “Pathogenic Role of Epithelial Plasticity Programs in Lung Cancer Tumorigenesis and Treatment Resistance”.

Abstracts

- Jarey Wang, Amol Shetty, Yang Song, Noura Radwan, Soha Bazayr, Xiaolei Shi, Theodore DeWeese, Daniel Song, Ryan Phillips, Matthew Deek, Philip Sutera, Ana Kiess, **Phuoc Tran**. Proteomic profiling of metastatic castration-sensitive prostate cancer treated with stereotactic ablative radiotherapy. AACR Special Conference in Cancer Research: Translating Targeted Therapies in Combination with Radiotherapy 2025.
- Matthew P. Deek, Yang Song, Amol Shetty, Philip Sutera, Adrianna A. Mendes, Kim Van der Eecken, Emmalyn Chen, Timothy Showalter, Trevor J. Royce, Tamara Todorovic, Huei-Chung Huang, Scott A. Houck, Rikiya Yamashita, Ana P. Kiess, Daniel Y. Song, Tamara Lotan, Andre Esteva, Felix Y. Feng, Piet Ost, **Phuoc T. Tran**. A digital pathology multimodal artificial intelligence algorithm is associated with pro-metastatic genomic pathways in oligometastatic prostate cancer. Oral Presentation in the Plenary 4: AI in Radiation Therapy Session at the AACR Special Conference in Cancer Research: Translating Targeted Therapies in Combination with Radiotherapy 2025.
- Philip Sutera, Yang Song, Amol Shetty, Jarey Wang, Kim Van der Eecken, Alex Hakanson, Yang Seagle Liu, Adrianna A. Mendes, Xiaolei Shi, Elai Davicioni, Emmalyn Chen, Rikiya Yamashita, Timothy Showalter, Tamara Lotan, Theodore DeWeese, Ana Kiess, Daniel Song, Matthew Deek, Piet Ost, **Phuoc Tran**. Evaluating associations between genomic classifier and digital pathology based multi-modal AI biomarkers in oligometastatic castration-sensitive prostate cancer. Oral Presentation in the Plenary 4: AI in Radiation Therapy Session at the AACR Special Conference in Cancer Research: Translating Targeted Therapies in Combination with Radiotherapy 2025.
- Triet Nguyen, Jinhee Chang, Kathleen Gabrielson, Amol Shetty, Yang Song, Apaala Chatterjee, Audrey Lafargue, Yoo Sun Kim, Danielle Council, Aaron Chan, Dipanwita Dutta Chowdhury, Muhammad Ajmal Khan, Nick Connis, Daniel Sforza, Eric Gardner, Christopher McFarland, Mohammad Rezaee, Nitin Roper, Christine Hann, **Phuoc Tran**. TWIST1 Associates with Resistance to Treatment and Twist1 Drives Tumor Progression in vivo for Small Cell Lung Cancer. AACR Special Conference in Cancer Research: Translating Targeted Therapies in Combination with Radiotherapy 2025.

Clinical Trial Enrollment

- 6 patients were enrolled (35/122 total) on the **TERPS trial**.

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Awards/Honors

- None reported

Please note that these examples are representative of productivity from the ROBIN OligoMET Center members and are not exclusively attributable to the U54 grant.