

ROBIN OligoMET Center

Monthly Research Update: October 2024

Publications

OCTOBER AT A GLANCE TOTALS	
Publications	9
Grants and contracts	
New awards	2
Submitted	1
Oral Presentations	1
Abstracts	15
Clinical trials	
TERPS	2
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.
- Kaiser A, Siddiqui MM, Bosley-Smith J, Wang S, Aryankalayil J, **Mishra MV**, Ryan AS, D'Adamo CR. [Weight Loss, Pathological Changes, and Inflammatory Effects from a Short-Term Ketogenic Diet in Overweight and Obese Men with Untreated Prostate Cancer on Active Surveillance](#). *Nutrients*. 2024 Oct 30;16(21):3716. doi: 10.3390/nu16213716. PMID: 39519548; PMCID: PMC11547181.
- Modiri A, Mossahebi S, **Sawant A**, Chen S, Zhang B, Yi B. [Sectorized single-energy volumetric-modulated proton arc therapy \(VPAT\): A preliminary multi-disease-site concept study](#). *Phys Med*. 2024 Nov;127:104829. doi: 10.1016/j.ejmp.2024.104829. Epub 2024 Oct 4. PMID: 39368298.
- Ross AE, Zhang J, Huang HC, Yamashita R, Keim-Malpass J, Simko JP, DeVries S, Morgan TM, Souhami L, Dobelbower MC, McGinnis LS, Jones CU, Dess RT, Zeitzer KL, Choi K, Hartford AC, Michalski JM, Raben A, Gomella LG, Sartor AO, Rosenthal SA, Sandler HM, Spratt DE, Pugh SL, Mohamad O, Esteva A, Chen E, Schaeffer EM, **Tran PT**, Feng FY. [External Validation of a Digital Pathology-based Multimodal Artificial Intelligence Architecture in the NRG/RTOG 9902 Phase 3 Trial](#). *Eur Urol Oncol*. 2024 Oct;7(5):1024-1033. doi: 10.1016/j.euo.2024.01.004. Epub 2024 Feb 1. PMID: 38302323; PMCID: PMC11289167.
- Pakula H, Pederzoli F, Fanelli GN, Nuzzo PV, Rodrigues S, **Loda M**. [Deciphering the Tumor Microenvironment in Prostate Cancer: A Focus on the Stromal Component](#). *Cancers (Basel)*. 2024 Oct 31;16(21):3685. doi: 10.3390/cancers16213685. PMID: 39518123; PMCID: PMC11544791.
- Pallasaho S, Gondane A, Kutz J, Liang J, Yalala S, Dubeau DY, Pospiech H, Thomas CJ, **Loda M**, Itkonen HM. [Compromised CDK12 activity causes dependency on the high activity of O-GlcNAc transferase](#). *Glycobiology*. 2024 Oct 3:cwae081. doi: 10.1093/glycob/cwae081. Epub ahead of print. PMID: 39361894.

ROBIN OligoMET Center
Monthly Research Update: October 2024

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8. **Tran PT.** [Management of oligometastatic hormone-sensitive prostate cancer.](#) Clin Adv Hematol Oncol. 2024 Oct;22(8):370-373. PMID: 39356815.
9. **Tward JD,** Huang HC, Esteva A, Mohamad O, van der Wal D, Simko JP, DeVries S, Zhang J, Joun S, Showalter TN, Schaeffer EM, Morgan TM, Monson JM, Wallace JA, Bahary JP, Sandler HM, Spratt DE, Rodgers JP, Feng FY, **Tran PT.** [Prostate Cancer Risk Stratification in NRG Oncology Phase III Randomized Trials Using Multimodal Deep Learning With Digital Histopathology.](#) JCO Precis Oncol. 2024 Oct;8:e2400145. doi: 10.1200/PO.24.00145. Epub 2024 Oct 24. PMID: 39447096; PMCID: PMC11520341.

Grants and Contracts

Funded:

- **Mark Mishra MD, PI,** on a clinical trial funded by Monteris Medical Corp., for “Recurrent brain metastases after SRS Trial (REMASTer)” (\$61,375).
- **Lei Ren, PhD,** MPI/Gaykalova-Contact PI (UMB IGS), 1R01DE33426, NIH R01 grant for “Study of biological and radiographic biomarkers and association with ancestry and survival disparities in oral cavity squamous cell carcinoma using AI approaches,” 08/2024–5/2029 (\$3,292,352).

Submitted:

- **Phuoc Tran, MD, PhD,** PI UMB (Partnering submission with JHU), DOD CDMRP Prostate Cancer Research Program Data Science Award for “Novel metastatic biology elucidated from digital pathology artificial intelligence coupled with spatial transcriptomics in oligometastatic prostate cancer (\$777,286).

Oral Presentations

- **Phuoc T.,** Emory Winship Cancer Institute Grand Rounds (October 23, 2024 – Atlanta, GA). “The Space-Time Continuum in Metastatic Castration-Sensitive Prostate Cancer: The Final Frontier?”.

Abstracts

- **Phuoc T. Tran,** Alexander D. Sherry, Soha Bazayr, Jarey Wang, Philip Sutera, Noura Radwan, Ryan M. Phillips, Matthew P. Deek, Jiayun Lu, Shirl Dipasquale, Curtiland Deville, Theodore L. DeWeese, Daniel Y. Song, Hao Wang, Matthew Abramowitz, Neil Desai, Alejandro Berlin, Bradley Stish, Chad Tang, Ana P. Kiess. Outcomes of Radium-223 and SABR Versus SABR for oligometastatic prostate cancer – The RAVENS phase 2 randomized trial. Oral presentation in the Late Breaking Abstracts Special Session for the ASTRO 2024 National Meeting.
- Soha Bazayr, Philip Sutera, Matthew P. Deek, Jarey Wang, Ryan Phillips, Noura Radwan, Catharine Marshall, **Mark Mishra, Zaker Rana,** Jason Molitoris, Young Kwok, Santosh Gupta, Rick Wenstrup, Theodore L. DeWeese, Daniel Y. Song, Kenneth J. Pienta, Emmanuel S. Antonarakis, Ana Kiess, **Phuoc T. Tran.** Assessment of Circulating Tumor Cells in Oligometastatic Castration-Sensitive Prostate Cancer Patients from the ORIOLE Trial. Oral presentation for the ASTRO National Meeting 2024.
- Philip Sutera, Matthew P. Deek, Adrianna A. Mendes, Yang Song, Amol Shetty, 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, **Phuoc T. Tran,** Piet Ost. Validation of a digital pathology-based multimodal artificial intelligence model in oligometastatic castration-sensitive prostate cancer including in patients from the STOMP and ORIOLE phase II randomized clinical trials. **Oral presentation** for the ASTRO National Meeting 2024.
- Audrey Lafargue, Hailun Wang, Sivarajan T. Chettiar, Rajendra P. Gajula, Amol Shetty, Yang Song, Brian W. Simons, Triet Nguyen, Nick Connis, Dipanwita Dutta Chowdhury, Jinhee Chang, Danielle Council, Katriana Nugent, Ismaeel Siddiqui, Kekoa Taparra, Mohammad Rezaee, Natasha Zachara, Zachary S. Morris, Christopher McFarland, Sarki Abba Abdulkadir, Christine Hann, **Phuoc T. Tran.** TWIST1-induced suppression of oncogene-induced senescence in non-small cell lung cancer requires the transactivation domain of TWIST1. ASTRO National Meeting 2024.

ROBIN OligoMET Center
Monthly Research Update: October 2024

Abstracts

- Jinhee Chang, Dipanwita Dutta Chowdhury, Danielle Council, Triet Nguyen, Shreya Jagtap, Aaron Chan, **Muhammad Ajmal Khan**, Nick Connis, Pedro Torres-Ayuso, John Brognard, Moahmmad Rezaee, Audrey Lafargue, Christine L. Hann, **Phuoc T. Tran**. Investigating the Role of TNIK in the Pathogenesis of Lung Squamous Cell Carcinoma. ASTRO National Meeting 2024.
- **Muhammad Ajmal Khan**, Jinhee Chang, Triet Nguyen, Danielle Council, Dipanwita Dutta Chowdhury, Amol Shetty, Yang Song, Aaron Chan, Priyanshi Patel, Lucas Tran, Jiayu Chen, Katriana Nugent, Ghali Lemtiri-Chlieh, Reem Malek, Noelle R. (Jurcak) Thielman, Keyu Li, Lei Zheng, Kathleen Gabrielson, **Phuoc T. Tran**, Audrey Lafargue. Modeling Twist1 Overexpression in a Pancreatic Ductal Adenocarcinoma Mouse Model. ASTRO National Meeting 2024.
- Muhammad Hamza, Hua-Ren Ryan Cherng, Kai Sun, **Phuoc Tran**, Søren Bentzen, **Mark Mishra**. Rates of Attrition in Black Patients with Prostate Cancer Enrolled on Clinical Trials: A Pooled Secondary Analysis of RTOG 9601, 9902, 0126, and 0415. ASTRO National Meeting 2024.
- Ritesh Kumar, Chengzhu Zhang, Phil Sutera, Lara Hathout, Salma Jabbour, **Lei Ren**, **Phuoc T. Tran**, Ke Nie, Matthew P. Deek. Multi-omics models can predict Prostate Specific Membrane Antigen avidity for Computed Tomography lesions in oligo-metastatic castration sensitive prostate cancer. ASTRO National Meeting 2024.
- Philip Sutera, Matthew P. Deek, Adrianna A. Mendes, Yang Song, Amol Shetty, 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, **Phuoc T. Tran**, Piet Ost. Validation of a digital pathology-based multimodal artificial intelligence model in oligometastatic castration-sensitive prostate cancer including in patients from the STOMP and ORIOLE phase II randomized clinical trials. Oral presentation for the ASTRO National Meeting 2024.
- Philip Sutera, Kim Van der Eecken, Yang Song, Amol C. Shetty, Alex Hakansson, Elai Davicioni, Sofie Verbeke, Jo Van Dorpe, Valérie Fonteyne, Bram De Laere, Lara Hathout, Ronald Ennis, Salma K Jabbour, Zaker Rana, Jason Molitoris, Ana, Kiess, Daniel Y. Song, **Phuoc T. Tran**, Piet Ost, Matthew P. Deek. Genomic Predictors of Response to Metastasis Directed Therapy With or Without Androgen Deprivation Therapy. Quick Pitch Oral presentation for the ASTRO National Meeting 2024. ASTRO 2024 Merit Award.
- Shalini Moningi, Ho YH, Proudfoot JA, Sutera P, Deek M, Ryan Phillips, Zaker Rana, Jason Molitoris, Young Kwok, **Mark Mishra**, Catherine Spina, Engelman A, Ross AE, Liu Y, Davicioni E, Jia A, Spratt DE, Leapman MS, **Phuoc T. Tran**. Examination of Decipher prostate genomic classifier in patients with de novo metastatic disease from a large scale real-world clinical and transcriptomic data linkage. Oral presentation for the ASTRO National Meeting 2024.
- Sophia C. Kamran, Monica Borges, Daniel Spratt, Neha Vapiwala, Jason Efstathiou, David Miyamoto, PhD, Kent Mouw, Melissa Vyfhuis, Quynh-Thu Le, Henning Willers, Eliezer Van Allen, Franklin Huang, Jeff Michalski, Jean-Paul Bahary, Joelle Helou, Himanshu Lukka, Stephanie L. Pugh, Jennifer Wenzel, Felix Feng, **Phuoc Tran**. Inequities in the NRG prostate cancer biobank are linked to non-White race, Hispanic/Latino ethnicity and higher socioeconomic disadvantage. ASTRO National Meeting 2024.
- Triet Nguyen, Jinhee Chang, Kathleen Gabrielson, Amol Shetty, Yang Song, Audrey Lafargue, Shreya Jagtap, Danielle Council, Aaron Chan, Dipanwita Dutta Chowdhury, **Muhammad Ajmal Khan**, Nick Connis, Francesca A. Carrieri, **Eddie Imada**, Daniel Sforza, Eric Gardner, Christopher McFarland, **Luigi Marchionni**, Mohammad Rezaee, Christine Hann, **Phuoc T. Tran**. Investigating the roles of the epithelial-mesenchymal transition program in small cell lung cancer tumorigenesis and chemoradiation response. Quick Pitch Oral presentation for the ASTRO National Meeting 2024.
- Xiao Ling, Soha Bazayr, Matthew Ferris, Jason Molitoris, E. Allor, H. Thomas, Danielle Arons, Lisa Schumaker, Rebecca Krc, William S. Mendes, Phuoc Tran, Raneer Mehra, Daria A. Gaykalova, Lei Ren. CT-based radiomic biomarkers for predicting progression-free survival in head and neck squamous cell carcinoma. ASTRO National Meeting 2024.

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Monthly Research Update: October 2024

Abstracts

- Yang Song, Amol Shetty, Philip Sutura, Matthew P. Deek, 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 for the ASTRO National Meeting 2024.

Clinical Trial Enrollment

- 2 patient was enrolled (28/122 total) on the **TERPS** trial.

Awards/Honors

- None reported