

Department of Radiation Oncology

Monthly Research Update: July 2025

UM Radiation Oncology at AAPM 2025

JULY AT A GLANCE TOTALS

Clinical trials	
Total enrolled	32
GCC, other	11
NRG, co-ops	2
PCG, other registries	19
Grants and contracts	
New awards	0
Submitted	3
Articles published	10

Department of Radiation Oncology members presented research in a broad range of educational and other forums at the 67th annual meeting of the American Association of Physicists in Medicine (AAPM), July 27–30, in Washington, DC. With almost 50 presentations and service on panels, committees, and as moderators, the department was well represented across its many areas of research and practice. The theme of the meeting was “Coming together to forge ahead in medical physics.” The AAPM meeting is the world’s largest program of scientific, educational, and professional research in the medical physics field, drawing thousands of attendees.

Department members serving as moderators included: **Lei Ren, PhD**, and **Junliang Xu, PhD**. “An impressive 14 of the presentations on which our faculty members were authors were oral talks, with 5 more ‘snap orals’,” said Amit Sawant, PhD, Vice Chair for Medical Physics in the Department of Radiation Oncology. “Our international reach was especially visible this year. Podium talks and posters from our group represented ongoing and promising collaborations with researchers from universities and industry in Denmark, Germany, India, Japan, Turkey, and South Africa.”

See the AAPM 2025 UM participation list attached to this issue of the *Monthly Research Update*.

Grants and Contracts

Submitted:

Hem Shukla, PhD, PI, Maryland Stem Cell Research Fund Launch Program for “Pancreas organoids derived from patients mesenchymal stem cells and iPSCs could serve as a model to understand stress-induced beta-cell damage” (\$199,334).

Amit Sawant, PhD, lead MPI, renewal/resubmission of NIH R01-CA202761 NCI Investigator-Initiated Early Phase Clinical Trials for Cancer Treatment and Diagnosis for “The INSPIRE trial integrating serial and parallel interconnected respiratory elements for sparing post-radiotherapy pulmonary function” (\$3,755,629).

Amit Sawant, PhD, lead MPI, to DOD Peer Reviewed Clinical Trial Award for “Preserving post-radiotherapy respiratory function using virtual bronchoscopy-guided dose-sparing of interconnected serial and parallel functional lung units” (\$7,203,088).

Clinical Trial Enrollment

- 19 patients at MPTC on the **Proton Collaborative Group Registry**
- 3 patients at UMMC on **GCC 2384**: Evaluation of improved onboard patient imaging with the HyperSight platform on TrueBeam 4.1
- 6 patients at UMMC on **GCC 2380**: A single-arm phase I-II trial evaluating selective adjuvant therapy for HPV-mediated oropharynx SCCs based on residual circulating tumor DNA (ctDNA) levels (SAVAL)
- 1 patient at UMMC and 1 at MPTC on **GCC21136**: Phase 2 randomized total eradication of metastatic lesions following definitive radiation to the prostate in de novo oligometastatic prostate cancer (TERPS) trial
- 1 patient at BWMC on **NRG BR007**: A phase III clinical trial evaluating de-escalation of breast radiation for conservative treatment of stage I, hormone sensitive, HER-2 negative oncotype recurrence score ≤18 breast cancer
- 1 patient at BWMC on **NRG GU009**: Parallel phase III randomized trials for high risk prostate cancer evaluating de-intensification for lower genomic risk and intensification of concurrent therapy for higher risk genomic risk with radiation (PREDICT-RT)

Information for this monthly update should be provided no later than the second Wednesday of each month to Miek Segers at msegers@som.umaryland.edu. The update will be published on the second Friday of each month.

Have questions about identifying a funding source? Finding research partners across the UMB/UM campuses or at another university? Defining future research strategies? Or organizing your thoughts on (virtual) paper? Contact Nancy Knight, PhD, Director of Academic and Professional Development for the department, at nknight@umm.edu

Articles Published

Entered into PubMed July 10–August 7. Titles link to PubMed abstracts.

1. Almohtasib J, Indelicato DJ, Paulino AC, Mihalcik S, Lee J, Ermoian R, Chang JH, **Kwok Y**, Perentesis J, Perkins SM, Hill-Kayser C, Zeina W, Laack NN, Yock TI, Gargollo PC. **Assessing acute and long-term toxicities of proton radiation therapy in pediatric pelvic tumors: Findings from the Pediatric Proton Consortium Registry.** *Pediatr Blood Cancer.* 2025 Jul 14:e31811. Online ahead of print.
2. **Biswal NC, Zakhary MJ**, Parchur AK, Mogilnay R, **Ferris MJ, Nichols EM**, Witek ME, **Yi B.** Optimizing quality assurance CT schedules during adaptive proton therapy for enhanced patient care. *J Appl Clin Med Phys.* 2025 Jul;26(7):e70142.
3. Glossner L, Eckstein M, Mark C, Beckmann MW, Hartmann A, **Strissel PL**, Strick R. Tumor clusters with divergent inflammation and human retroelement expression determine the clinical outcome of patients with serous ovarian cancer. *Mol Oncol.* 2025 Jun 10. Online ahead of print.
4. Li X, Bhagroo S, Su FC, **Rahimi R**, Tward J. Enhancing inguinal tumor treatment outcomes with a customized 3D-printed bolus. *J Appl Clin Med Phys.* 2025 Jul;26(7):e70175.
5. Lu K, Zhang Z, **Ren L**, Yin FF. Deep residual network-based projection interpolation and post-processing techniques for thoracic patient CBCT reconstruction. *Med Phys.* 2025 Jul;52(7):e17953.
6. **Moradmand H, Molitoris J**, Ling X, Schumaker L, Allor E, Thomas H, Arons D, **Ferris M**, Krc R, **Mendes WS**, **Tran P**, **Sawant A**, Mehra R, Gaykalova DA, **Ren L.** Graph feature selection for enhancing radiomic stability and reproducibility across multiple institutions in head and neck cancer. *Sci Rep.* 2025 Jul 31;15(1):27995.
7. Phillips RM, Proudfoot JA, Davicioni E, Liu Y, Spratt DE, Simko JM, Den RB, Pollack A, Rosenthal SA, Sartor AO, Sweeney CJ, Attard G, Longoria L, Patel S, Straza MW, Efsthathiou JA, Shah AB, Hoffman KE, Rodgers JP, Sandler HM, Feng FY, **Tran PT.** Transcriptomic analysis of localized high-risk prostate cancer improves prognostication and identifies benefit from adding docetaxel to definitive radiotherapy with androgen suppression in the NRG Oncology/RTOG 0521 phase 3 trial. *Eur Urol Oncol.* 2025 Jul 16:S2588-9311(25)00103-8. Online ahead of print.
8. Sherry AD, Siddiqui BA, Haymaker C, Fellman BM, Medina-Rosales MN, Bathala TK, Wang S, Liu S, Seo A, Hara K, Lu H, Troncoso P, Chun SG, Ha CS, Mayo LL, Mok H, Park RJ, Chapin BF, Phillips RM, Deek MP, Kovitz CA, Aparicio A, Zurita AJ, Pilie PG, Cohen L, Choi SL, Reuben A, **Tran PT**, Corn PG, Subudhi SK, Tang C. Continuous androgen deprivation therapy with or without metastasis-directed therapy for oligometastatic prostate cancer: The multicenter phase 2 randomized EXTEND trial. *Eur Urol.* 2025 Jul 31:S0302-2838(25)00396-3. Online ahead of print.
9. **Soomro MH, Xu J, Ding J, Cammin J, Lamichhane N**, Van Slyke A, Liang X, Roys S, Zhuo J, Ernst T, Gullapalli RP, Nevo E, **Sawant A.** Geometric characterization of an electromagnetic surface tracking system in a radiation therapy environment. *J Appl Clin Med Phys.* 2025 Jul;26(7):e70187.
10. Zamboglou C, Doncker W, Christoforou AT, A...**Tran PT**, et al. oDigital pathology biomarkers for guiding radiotherapy-based treatment concepts in prostate cancer - a systematic review and expert consensus. *Radiother Oncol.* 2025 Jul 9;210:111039. Online ahead of print.

Important Dates for Upcoming Funding Submissions

Below is an updated calendar for remaining **Cycle III NIH Submission Deadlines for 2025**, with firm due dates for major standard NIH deadlines (RFA/PA dates may differ). Contact the Department Office of Research Administration (msegers@som.umaryland.edu) ASAP if you plan to submit a proposal, regardless of funder.

NIH deadline ⁴	DORA deadline ¹	ORA deadline ²	SPA deadline ³
R01/U01 Oct 5 (New)	09/23/2025	09/25/2025	09/27/2025
R21* Oct 16 (New)	10/03/2025	10/07/2025	10/09/2025

¹**DORA deadline:** All forms to be included in proposal, known or in draft, budget final, subcontractor budgets and information final in final form, 9 business days prior to NIH deadline. ²**ORA deadline:** Personnel, effort, budget materials, performance site, and compliance forms routed in final form, 7 business days prior to NIH deadline. ³**SPA deadline:** All proposal materials routed in FINAL form by 5 pm, 5 business days prior to NIH deadline. No more corrections allowed, unless indicated (after review) by SPA. *R21 deadline is also for R03, R33, R21/R33, R34, R36, U34, UH2, UH3, and UH2/UH3 submissions.