Department of Radiation Oncology Monthly Research Update: October 2024

OCTOBER AT A GLANCE TOTALS

Clinical trials

Total enrolled	**42**
GCC, other	13
NRG, NCI, co-ops	2
PCG, other registries	27

Grants and contracts

New awards	1
Submitted	3
Articles published	**5**

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

NIH, AI, and Your Funding Submission

In a blog posted on November 4, Michael Lauer, MD, NIH Deputy Director for Extramural Research, reviewed the ways in which NIH is currently using artificial intelligence (AI) tools to manage grants and applications. Dr. Lauer noted that these "approaches move us towards continually funding the most meritorious research possible." Although multiple uses of AI are being explored, they are currently in active use in 3 areas.The first is the Automated Referral Tool, launched in 2022, which uses referral data from the previous 3 reviews and information on specific study sections to assist NIH staff in assigning applications for appropriate review. This tool is also available to investigators. A second AI-based natural language processing (NLP) tool assesses application abstracts and pairs these with the scientific experience and expertise of program officers. Dr. Lauer noted that this "has proven highly successful at getting the right applications to the right program staff in a timely fashion, dramatically reducing workloads and resource needs." The third area of AI-based innovations is in the historically challenging problem of duplication and overlap in applications under consideration. Several tools are being applied to proposals, including NLP algorithms that identify similar language and related tools that indicate overlapping proposals. In the first quarter of 2024, 243 overlapping applications were withdrawn by their PIs. NIH is likely to continue to add more such AI-based tools as the technology advances.

Clinical Trial Enrollment

- 25 patients at MPTC on the **Proton Collaborative Group Registry.**
- 2 patients enrolled at MPTC on the **DTT HUD.**
- 1 patient at UCH on **NRG GU010:** Parallel phase III randomized trials of genomic risk stratified unfavorable intermediate risk prostate cancer: De-intensification and intensification clinical trial evaluation (Guidance).
- 6 patients at UMMC on **GCC 2384:** Evaluation of improved onboard patient imaging with the Varian HyperSight platform on Truebeam 4.1.
- 1 patient at UCH 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 genomic risk with radiation (Predict-R*).
- 1 patient enrolled at MPTC and 1 at UMMC on **GCC 21136:** Phase 2 randomized total eradication of metastatic lesions following definitive radiation to the prostate in de novo oligometastatic prostate cancer (TERPS) trial.
- 1 patient enrolled at UCH and 1 at UMMC on **GCC 1926:** Phase Ib dose escalation of single-fraction preoperative stereotactic partial-breast irradiation for early-stage breast cancer.
- 1 patient enrolled at MPTC on **GCC 2032:** Phase 1 feasibility study of strength training with androgen deprivation and proton therapy for patients with prostate cancer.
- 1 patient enrolled at MPTC on **GCC 23100:** A randomized trial of high-risk metachronous oligometastatic prostate cancer with high-risk mutations treated with metastasis directed therapy and niraparib/abiraterone and prednisone (KNIGHTS).
- 1 patient enrolled at MPTC on **GCC 20138:** Laser interstitial thermal therapy followed by hypofractionated radiation therapy for treatment of newly diagnosed high-grade gliomas.

Grants and Contracts

Awarded
- **Mark Mishra MD,** PI, on a clinical trial funded by Monteris Medical Corp., for "Recurrent brain metastases after SRS Trial (REMASTer)" ($61,375).

Submitted
- **Hem Shukla, PhD,** and **Jason Molitoris, MD, PHD**, multi-PD/PI, on NIH R21 (PA-20-195) for "Understanding the role of OCT4 and SOX2 in pancreatic cancer stemness, resistance to therapies and immune suppression in patient-derived tumor organoid model" ($427,625).
- **Dario Rodrigues, PhD**, PI, subaward with the University of Rochester Medical Center on NIH R01 (PAR-22-127) for "Ultrasound tomography guided mild hyperthermia theranostic system" ($171,184)**.**

Articles Published

Entered into PubMed October 11–November 7. Titles link to PubMed abstracts, many of which contain full-text links.

1. Khan R, **Rahimi R,** Fan J, Chen KL. Systematic characterization of new EBT4 radiochromic films in clinical x-ray beams. *Biomed Phys Eng Express.* 2024 Nov 6;11(1).
2. Rosenstein BS, Yamoah K, **Bentzen SM,** Kerns SL, McDonald JT, West CML, Vega A, Rattay T, Ricks-Santi LJ; Radiogenomics Consortium. The need to enrich population diversity in radiogenomic research. *Int J Radiat Oncol Biol Phys.* 2024 Nov 15;120(4):1107-1110.
3. Snider JW, Rustin GO, Mayr NA, **Molitoris J**, Chhabra AM, Kang M, Simone CB, **Mossahebi S**, Griffin R, Mohiuddin M, Zhang H, Amendola B, Perez N, Tubin S, Limoli C, Marter K, Mahadevan A, Coleman N, Ahmed M. The Radiosurgery Society Working Groups on GRID, LATTICE, Microbeam, and FLASH Radiotherapies: 2022–2023 Advancements symposium and subsequent progress made. *Pract Radiat Oncol.* 2024 Oct 22:S1879-8500(24)00282-0. Online ahead of print.
4. 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. Epub 2024 Oct 24.
5. Wisdom AJ, Yeap BY, Michalski JM, Horick NK, Zietman AL, Christodouleas JP, Kamran SC, Parikh RR, Vapiwala N, Mihalcik S, Miyamoto DT, Zeng J, Gay HA, Pisansky TM, **Mishra MV**, Spratt DE, Mendenhall NP, Soffen EM, Bekelman JE, Efstathiou JA. Setting the stage: Feasibility and baseline characteristics in the PARTIQoL Trial comparing proton therapy versus intensity modulated radiation therapy for localized prostate cancer. *Int J Radiat Oncol Biol Phys.* 2024 Sep 30:S0360-3016(24)03444-8. Online ahead of print.

Important Dates for Upcoming Funding Submissions

Below is an updated calendar with firm due dates for upcoming 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 any funding proposal, regardless of funder.

NIH deadline	DORA budget, prelim materials	Dean/SOM prelim materials	FINAL Dean/SOM/SPA
R01/U01 New Feb 5	1/22/2025	1/24/2025	1/29/2025
R21 New Feb 16	2/05/2025	2/07/2025	2/09/2025