

Department of Radiation Oncology

Monthly Research Update: November 2023

Maryland at FRPT Meeting

Members of the Department of Radiation Oncology were invited participants and lecturers at the third annual FLASH Radiotherapy and Particle Therapy Conference, held in Toronto, Canada, December 5–7. The conference brings together researchers and students from academia and industry with a broad range of professionals working in clinical oncology to provide a multidisciplinary forum on the latest developments in FLASH radiotherapy.

Kevin Byrne, MSc, presented “Real-time, target-proximal in vivo FLASH dosimetry using an inorganic scintillation detector,” which was named a best abstract for the meeting. Mr. Byrne also served as co-chair of a session on “Quality assurance and real-time dosimetry for FLASH RT measurement.” **Yannick Poirier, PhD**, presented “Consensus recommendations from the FlashForward Consortium FLASH Radiation Safety Working Group.” **Kai Jiang, PhD**, presented “A high-throughput platform for murine subcutaneous tumor irradiation with UHDR electron beam at variable dose rates.” **Sina Mossahebi, PhD**, presented “Combining proton flash and spatially fractionated radiotherapy—initial dosimetric characterization.”

In 2020, our department made a \$1.8 million commitment across all 3 divisions to elucidate the basic science of high-dose-rate FLASH techniques, conduct and report on translational studies, and implement the results in clinical applications.

NOVEMBER AT A GLANCE TOTALS

Clinical trials	
Total enrolled	35
GCC, other	5
NRG, NCI, co-ops	4
PCG Registry	26
Grants and contracts	
New awards	0
Submitted	3
Articles published	8

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

Clinical Trial Enrollment

- 26 patients at MPTC on the **PCG Registry**
- 1 patient at MPTC and 2 at UMMC 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 **Alliance A221803**: Mepitel film for the reduction of radiation dermatitis in breast cancer patients undergoing post-mastectomy radiation therapy: A randomized phase III clinical trial
- 1 patient at Eastern Shore on **CCTG MA.39**: TAILOR RT: A randomized trial of regional radiotherapy in biomarker low risk node and T3N0 positive breast cancer
- 1 patient at CMRO on **NRG BR007**: A phase III clinical trial evaluating de-escalation of breast radiation (DEBRA) for conservative treatment of stage I, hormone sensitive, HER2-negative, oncotype recurrence score ≤ 18 breast cancer
- 1 patient at UMMC on **GCC1876**: Tumor bed boost using a breast specific radiosurgery device, the GammaPod: Registry study and evaluation of quality of life with development of sizing nomogram
- 1 patient at MPTC on **GCC 20138**: Laser interstitial thermal therapy followed by hypofractionated radiation therapy for treatment of newly diagnosed high-grade gliomas
- 1 patient at MPTC on **NRG HN009**: Randomized phase II/III Trial of radiation with cisplatin (at 100 mg/m²) every three weeks versus radiation with weekly cisplatin (at 40 mg/m²) for patients with locoregionally advanced squamous cell carcinoma of the head and neck (SCCHN)

Grants and Contracts

Submitted

- **Phuoc Tran, MD PhD**, PI/PD, as a subaward with University of Miami, to NIH/NCI PA-20-185 for “Transcriptomic Signatures to direct postoperative treatment of prostate cancer after biomedical failure” (R01; resubmission; \$1,347,413).
- **Martha Francis, PhD**, PI/PD, to Oncology Nursing Foundation, Oncology Nursing Science Grant, for “Phase 1 Pilot Feasibility Randomized Controlled Trial Testing Serious Illness Conversation Guide (SICG) in Patient and Intimate Partner Dyads Living with Advanced Cancer” (through UMMCF, \$50,000).
- **Arezoo Modiri, PhD**, PI/PD to EIAP (Early Investigator Program at NIH), for “Pericardial Texture Changes on Imaging as Early Surrogates for Major Cardiotoxicity Caused by Thoracic Radiotherapy”, (Draft R01)

Articles Published

Entered into PubMed November 9–December 6. Title links to PubMed abstracts, with full-text links.

1. Batchelor TT, Won M, Chakravarti A, Hadjipanayis CG, Shi W, Ashby LS, Stieber VW, Robins HI, Gray HJ, Voloschin A, Fiveash JB, Robinson CG, Chamarthy U, **Kwok Y**, Cescon TP, Sharma AK, Chaudhary R, Polley MY, Mehta MP. [NRG/RTOG 0837: Randomized, phase II, double-blind, placebo-controlled trial of chemoradiation with or without cediranib in newly diagnosed glioblastoma](#). *Neurooncol Adv*. 2023 Oct 11;5(1):vdad116.
2. Constine LS, Marks LB, Milano MT, Ronckers CM, Jackson A, Hudson MM, Marcus KJ, Hodgson DC, Hua CH, Howell RM, Marples B, Yorke E, Olch A, **Bentzen SM**. [A user's guide and summary of Pediatric Normal Tissue Effects in the Clinic \(PENTEC\): Radiation dose-volume response for adverse effects after childhood cancer therapy and future directions](#). *Int J Radiat Oncol Biol Phys*. 2023 Nov 23:S0360-3016(23)07918-X. Online ahead of print.
3. Langevin B, Singh P, Plett PA, Sampson CH, Masters A, **Gibbs A, Faria E, Triesler S, Zodda A**, Jackson IL, Orschell CM, Gopalakrishnan M, Pelus LM. [Pharmacokinetics and biodistribution of 16,16 dimethyl prostaglandin E2 in non-irradiated and irradiated mice and non-irradiated non-human primates](#). *Radiat Res*. 2023 Nov 29. Online ahead of print.
4. Shaitelman SF, Anderson BM, Arthur DW, Bazan JG, Bellon JR, Bradfield L, Coles CE, Gerber NK, Kathpal M, Kim L, Laronga C, Meattini I, **Nichols EM**, Pierce LJ, Poppe MM, Spears PA, Vinayak S, Whelan T, Lyons JA. [Partial breast irradiation for patients with early-stage invasive breast cancer or ductal carcinoma in situ: An ASTRO clinical practice guideline](#). *Pract Radiat Oncol*. 2023 Nov 14:S1879-8500(23)00296-5. Online ahead of print.
5. **Tran PT**, Mouw KW. [SABR today...and tomorrow?](#) *Int J Radiat Oncol Biol Phys*. 2024;118(1):11. Online ahead of print.
6. Yang AH, Urrunaga NH, Siddiqui O, Wu A, Schliep M, **Mossahebi S**, Shetty K, **Regine WF, Molitoris JK**, Lominadze Z. [Proton beam stereotactic body radiotherapy and hypofractionated therapy with pencil beam scanning is safe and effective for advanced hepatocellular carcinoma and intrahepatic cholangiocarcinoma: A single center experience](#). *J Radiosurg SBRT*. 2023;9(1):43-52.
7. **Yao W**, Farr JB, **Mossahebi S, Yi B, Chen S**. [Technical note: Determination of proton linear energy transfer from the integral depth dose](#). *Med Phys*. 2023 Dec 3. Online ahead of print.
8. **Yi B, Jatczak J, Deng W, Poirier YP, Yao W, Witek ME, Molitoris JK, Zakhary MJ, Zhang B, Biswal NC, Ferris MJ, Mossahebi S**. [Is noncoplanar plan more robust to inter-fractional variations than coplanar plan in treating bilateral HN tumors with pencil-beam scanning proton beams?](#) *J Appl Clin Med Phys*. 2023 Nov 16:e14186. Online ahead of print.

Important Dates for Upcoming Funding Submissions

Below is an updated calendar with firm due dates for upcoming major NIH deadlines (individual RFA/PA dates may differ). Contact the Department Office of Research Administration (DORA) (msegers@som.umaryland.edu) ASAP if you plan to submit any funding proposal, regardless of funder. Failure to meet these deadlines may result in delaying your submission until the next cycle (if available).

NIH deadline	DORA budget, prelim materials	Dean/SOM prelim materials	FINAL Dean/SOM/SPA
R01/U01 New Feb 5	01/23/2024	01/25/2024	01/29/2024
R21 New Feb 16	02/05/2024	02/07/2024	02/09/2024
R01/U01 Resub March 5	02/21/2024	02/23/2024	02/27/2024
R21 Resub March 16	03/05/2024	03/07/2024	03/11/2024