

# Department of Radiation Oncology

## Monthly Research Update: April 2023

### Summer Medical Student Research Fellows

#### APRIL AT A GLANCE TOTALS

<b>Clinical trials</b>	
Total enrolled	40
GCC, other	12
NRG, NCI, co-ops	4
PCG Registry	24
<b>Grants and contracts</b>	
New awards	2
Submitted	1
<b>Articles published</b>	7

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](mailto: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](mailto:nknight@umm.edu)

The 2023 Summer Research Fellows for Radiation Oncology were announced in early May by Sarah McAvoy, MD, the department's Vice Chair for Education. In this 10-week program, UMSOM students are paired with mentors on research projects, culminating in presentations at the annual Medical Student Research Day. Our department has a long tradition of support for summer fellows, including dedicated financial support. Many students maintain ties with their mentors long after the summer program, including several who are now radiation oncologists. This year's fellows include **Zachery Keepers** (cosponsored by an Office of Student Research PRISM award), who will study "The use of human-derived pancreatic tumor organoids as a tool to evaluate treatment approaches to pancreatic cancer" with mentors Jason Molitoris, MD, and Hem Shukla, PhD; **Bolutife Olaganju**, who will work on "Investigation of anti-cancer properties of glycolysis inhibitor 3-bromopyruvate in combination with radiation on pancreatic cancer cell line models" with mentor Hem Shukla, PhD; **Julian Starks**, whose project will be on GammaPod/SRS plan delivery with Stewart Becker, PhD; and **Desiree Lejano** (funded by PRISM), who will work on "Retrospective chart analysis of breast cancer patients receiving intensity-modulated proton therapy at MPTC" with mentor Elizabeth Nichols, MD.

"This is an immersion experience for these outstanding UMSOM students," said Dr. McAvoy. "It's an opportunity for them to see first-hand the broad range of clinical, physics, basic science, and translational activities in radiation oncology. Please welcome them and consider spending some time discussing your own research and practice interests."

### Clinical Trial Enrollment

- 24 patients at MPTC on the **PCG Registry**
- 5 patients at MPTC on the **Deep Thermal Therapy HUD**
- 2 patients at MPTC on **GCC 19146**: Comparison and verification of radiation planning for pencil beam scanning proton therapy using single-energy and dual-energy computed tomography simulation methods.
- 1 patient at MPTC on **NRG GU010**: Parallel phase III randomized trials of genomic-risk stratified unfavorable intermediate-risk prostate cancer: De-intensification and intensification clinical trial evaluation.
- 1 patient at MPTC on **GCC 2242**: Hybrid virtual-MRI/CBCT for image guidance in liver radiation therapy.
- 1 patient at BWMC and 2 at MPTC on **GCC 20110**: A single-arm, single-stage phase II trial of selective avoidance of nodal volumes at minimal risk (SAVER) in the contralateral neck of patients with p16-positive oropharynx cancer.
- 1 patient at MPTC on **GCC 21136**: Phase II randomized total eradication of metastatic lesions following definitive radiation to the prostate in de novo oligometastatic prostate cancer (TERPS) trial.
- 1 patient at UMMC on **NRG CC009**: Testing if high dose radiation only to the sites of brain cancer compared to whole brain radiation that avoids the hippocampus is better at preventing loss of memory and thinking ability.
- 1 patient at UMMC 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.
- 1 patient at UMMC on **NRG BN005**: A phase II randomized trial of proton vs. photon therapy (IMRT) for cognitive preservation in patients with IDH mutant, low to intermediate grade gliomas.

## Radiation Oncology: Monthly Research Update: April 2023

### Grants and Contracts

#### Funded

- **Dario Rodrigues, PhD, PI**, from Pyrexar Medical for “In silico clinical trials of a noninvasive hyperthermia applicator to treat brain cancer using primate and human anatomical models” (\$30,833; Feb–May 2023).
- **Erika Davies, PhD, PI**, from PureTech LYT 100, Inc. for “Non-clinical studies in a mouse model of the delayed effects of acute radiation exposure, specifically radiation pneumonitis/fibrosis (DEARE lung fibrosis)” (\$82,974; Apr–Sep 2023).

#### Submitted

- **Arezoo Modiri, PhD, PI**, for an American Cancer Society Research Scholar Grant for “Radiation-induced pericardial changes on imaging as early surrogates for major cardiotoxicity” (\$787,133).

### Articles Published

Entered into PubMed April 12–May 10. Titles link to PubMed abstracts, with full-text links.

1. Chen G, Li Z, Wang J, Wang J, Du S, **Zhou J**, Shi J, Zhou Y. [An improved 3D KiU-net for segmentation of liver tumor](#). *Comput Biol Med*. 2023 May 4;160:107006. Online ahead of print.
2. Hallemeier CL, Moughan J, Haddock MG, Herskovic AM, Minsky BD, **Suntharalingam M**, Zeitzer KL, Garg MK, Greenwald BD, Komaki RU, Puckett LL, Kim H, Lloyd S, Bush DA, Kim HE, Lad TE, Meyer JE, Okawara GS, Raben A, Schefter TE, Barker JL Jr, Falkson CI, Videtic GMM, Jacob R, Winter KA, Crane CH. [Association of radiotherapy duration with clinical outcomes in patients with esophageal cancer treated in NRG Oncology trials: A secondary analysis of NRG Oncology randomized clinical trials](#). *JAMA Netw Open*. 2023 Apr 3;6(4):e238504.
3. Olson JD, Tooze JA, Bourland DJ, Cline JM, **Faria EB**, Cohen EP. [Measurement of renal cortical fibrosis by CT scan](#). *Res Diagn Interv Imaging*. 2023 Mar;5:100024.
4. Spratt DE, Liu VYT, Michalski J, Davicioni E, Berlin A, Simko JM, Efstathiou JA, **Tran PT**, Sandler HM, Hall WA, Thompson DJ, Parliament MB, Dayes IS, Correa RJM, Robertson JM, Gore EM, Doncals DE, Vigneault E, Souhami L, Karrison TG, Feng FY. [Genomic classifier performance in intermediate-risk prostate cancer: Results from NRG Oncology/RTOG 0126 randomized phase III trial](#). *Int J Radiat Oncol Biol Phys*. 2023 May 1:S0360-3016(23)00371-1. Online ahead of print.
5. Spratt DE, Tang S, Sun Y, Huang HC, Chen E, Mohamad O, Armstrong AJ, Tward JD, Nguyen PL, Lang JM, Zhang J, Mitani A, Simko JP, DeVries S, van der Wal D, Pinckaers H, Monson JM, Campbell HA, Wallace J, Ferguson MJ, Bahary JP, Schaeffer EM, Consortium NPCA, Sandler HM, **Tran PT**, Rodgers JP, Esteva A, Yamashita R, Feng FY. [Artificial intelligence predictive model for hormone therapy use in prostate cancer](#). *Res Sq*. 2023 Apr 21:rs.3.rs-2790858. Preprint.
6. Valenzi E, Bahudhanapati H, Tan J, Tabib T, Sullivan DI, Nouraei M, Sembrat J, Fan L, Chen K, Liu S, Rojas M, Lafargue A, Felsher DW, **Tran PT**, Kass DJ, Lafyatis R. [Single-nucleus chromatin accessibility identifies a critical role for TWIST1 in IPF myfibroblast activity](#). *Eur Respir J*. 2023 May 4:2200474. Online ahead of print.
7. Weiner AB, Liu Y, Hakansson A, Zhao X, Proudfoot JA, Ho J, Zhang JH, Li EV, Karnes RJ, Den RB, Kishan AU, Reiter RE, Hamid AA, Ross AE, **Tran PT**, Davicioni E, Spratt DE, Attard G, Lotan TL, Lee Kiang Chua M, Sweeney CJ, Schaeffer EM. [A novel prostate cancer subtyping classifier based on luminal and basal phenotypes](#). *Cancer*. 2023 Apr 14. 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](mailto: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 new sub. 06/05/23	05/23/23	05/25/23	05/30/23
R21 new sub. 06/16/23	06/02/23	06/07/23	06/09/23
R01 Resub. 07/05/23	06/20/23	06/23/23	06/27/23
R21 Resub. 07/16/23	06/30/23	07/07/23	07/11/23