Stanford

# M.Ramish Ashraf

Clinical Assistant Professor, Radiation Oncology - Radiation Physics

## Bio

### ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Radiation Oncology - Radiation Physics

### HONORS AND AWARDS

- AAPM-ASTRO Seed Grant, AAPM and ASTRO (2022)
- Best Abstract Award, International FLASH Radiotherapy and Particle Therapy Conference (FRPT) (2021)
- 3rd Position Young Investigator Symposium, AAPM Spring Clinical Meeting (2020)
- BEST Medical Resident Challenge Award, The Radiosurgery Society (2019)

### PROFESSIONAL EDUCATION

- Board Certification, American Board of Radiology , Therapeutic Physics (2025)
- Medical Physics Residency, Stanford Radiation Oncology , Medical Physics (2024)
- PhD, Dartmouth College , Medical Physics (2021)

### PATENTS

- Petr Bruza, Brian Pogue, Ramish Ashraf, Rongxiao Zhang, David Gladstone, Megan Clark, Roman Vasyltsiv. "United States Patent US 12,036,421 B2 Systems and methods for FLASH therapy", THE TRUSTEES OF DARTMOUTH COLLEGE, May 25, 2022

## Teaching

### COURSES

**2025-26**

- Experiential Learning in Medical Physics: BMP 257, RADO 257 (Spr)
- Medical Physics and Dosimetry: BMP 251, RADO 251 (Aut)

## Publications

### PUBLICATIONS

- **Emerging FLASH therapy platforms for stereotactic radiosurgery and body radiotherapy.** *Journal of radiosurgery and SBRT*
  Chen, D., Schulz, J. B., Melemenidis, S., Skinner, L., Xing, L., Loo, B. W., Ashraf, M. R.
  2026; 10 (1-2): 101-121
- **Multi-Institutional Verification of a Novel Predictor (Volume-Scaled SUVmax) for Successful Biology-Guided Radiotherapy Delivery of Small Targets.** *Cancers*
  Ashraf, M. R., Pham, D., Bal, G., Chen, H., Park, H. S., Watkins, T., Cai, B., Badiyan, S. N., Vitzthum, L. K., Loo, B. W., Surucu, M.

2025; 17 (22)

- **Effectiveness of FLASH vs. Conventional Dose Rate Radiotherapy in a Model of Orthotopic, Murine Breast Cancer.** *Cancers*
  Melemenidis, S., Viswanathan, V., Dutt, S., Kapadia, N., Lau, B., Soto, L. A., Ashraf, M. R., Thakur, B., Mutahar, A. Z., Skinner, L. B., Yu, A. S., Surucu, M., Casey, et al
  2025; 17 (7)

- **Rapid Sterilization of Clinical Apheresis Blood Products Using Ultra-High Dose Rate Radiation.** *International journal of molecular sciences*
  Melemenidis, S., Nguyen, K. D., Baraceros-Pineda, R., Barclay, C. K., Bautista, J., Lau, H. D., Ashraf, M. R., Manjappa, R., Dutt, S., Soto, L. A., Katila, N., Lau, B., Viswanathan, et al
  2025; 26 (6)

- **Dosimetric calibration of anatomy-specific ultra-high dose rate electron irradiation platform for preclinical FLASH radiobiology experiments.** *Medical physics*
  Wang, J., Melemenidis, S., Manjappa, R., Viswanathan, V., Ashraf, R. M., Levy, K., Skinner, L. B., Soto, L. A., Chow, S., Lau, B., Ko, R. B., Graves, E. E., Yu, et al
  2024

- **Improving access in medical physics residency programs for physicists with disabilities.** *Journal of applied clinical medical physics*
  Fagerstrom, J. M., Eliason, G., Al-Hallaq, H., Taylor, B. A., Ashraf, M. R., Viscariello, N.
  2024: e14518

- **Commissioning an ultra-high-dose-rate electron linac with end-to-end tests.** *Physics in medicine and biology*
  Dai, T., Sloop, A., Ashraf, M. R., Sunnerberg, J. P., Clark, M. A., Bruza, P., Pogue, B. W., Jarvis, L. A., Gladstone, D., Zhang, R.
  2024

- **Commissioning of a novel PET-Linac for biology-guided radiotherapy (BgRT).** *Medical physics*
  Surucu, M., Ashraf, M. R., Romero, I. O., Zalavari, L. T., Pham, D., Vitzthum, L. K., Gensheimer, M. F., Yang, Y., Xing, L., Kovalchuk, N., Han, B.
  2024

- **Multi-Institutional Audit of FLASH and Conventional Dosimetry with a 3D-Printed Anatomically Realistic Mouse Phantom.** *International journal of radiation oncology, biology, physics*
  Ashraf, M. R., Melemenidis, S., Liu, K., Grilj, V., Jansen, J., Velasquez, B., Connell, L., Schulz, J. B., Bailat, C., Libed, A., Manjappa, R., Dutt, S., Soto, et al
  2024

- **Exploring deep learning for estimating the isoeffective dose of FLASH irradiation from mouse intestinal histology images.** *International journal of radiation oncology, biology, physics*
  Fu, J., Yang, Z., Melemenidis, S., Viswanathan, V., Dutt, S., Manjappa, R., Lau, B., Soto, L. A., Ashraf, R., Skinner, L., Yu, S. J., Surucu, M., Casey, et al
  2024

- **Deep learning-based fluorescence image correction for high spatial resolution precise dosimetry.** *Physics in medicine and biology*
  Nomura, Y., Ashraf, M. R., Shi, M., Xing, L.
  2023

- **Angular correction methodology and characterization of a high-resolution CMOS array for patient specific quality assurance on a robotic arm linac.** *Journal of applied clinical medical physics*
  Ashraf, M. R., Krimmer, J., Zalavri, L., Gu, X., Wang, L., Chuang, C. F.
  2023: e14110

- **Characterization of a diode dosimeter for UHDR FLASH radiotherapy.** *Medical physics*
  Rahman, M., Kozelka, J., Hildreth, J., Schönfeld, A., Sloop, A. M., Ashraf, M. R., Bruza, P., Gladstone, D. J., Pogue, B. W., Simon, W. E., Zhang, R.
  2023

- **An Integrated 3D Printed Enclosure for a Radioluminescent-Based Phantom for Quality Assurance on a Robotic-Arm Linac.** *Physics in medicine and biology*
  Ashraf, M. R., Gibson, C., Skinner, L. B., Gu, X., Xing, L., Wang, L.
  2023

- **Clinical LINAC-based electron FLASH: Pathway for practical translation to FLASH clinical trials: LINAC electron FLASH.** *International journal of radiation oncology, biology, physics*

No, H. J., Wu, Y. F., Dworkin, M. L., Manjappa, R., Skinner, L., Ashraf, M. R., Lau, B., Melemenidis, S., Viswanathan, V., Yu, A. S., Surucu, M., Schüler, E., Graves, et al
2023

- **Human enteroids as a tool to study conventional and ultra-high dose rate radiation.** *Integrative biology : quantitative biosciences from nano to macro*
  Klett, K. C., Martin-Villa, B. C., Villarreal, V. S., Melemenidis, S., Viswanathan, V., Manjappa, R., Ashraf, M. R., Soto, L., Lau, B., Dutt, S., Rankin, E. B., Loo, B. W., Heilshorn, et al
  2023; 15
- **Radio-luminescent imaging for rapid, high resolution eye plaque loading verification.** *Medical physics*
  Yan, H., De Jean, P., Grafil, E., Ashraf, R., Niedermayr, T., Astrahan, M., Mruthyunjaya, P., Beadle, B., Xing, L., Liu, W.
  2022
- **Real-time optical oximetry during FLASH radiotherapy using a phosphorescent nanoprobe.** *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*
  Ha, B., Liang, K., Liu, C., Melemenidis, S., Manjappa, R., Viswanathan, V., Das, N., Ashraf, R., Lau, B., Soto, L., Graves, E. E., Rao, J., Loo, et al
  2022
- **Individual pulse monitoring and dose control system for pre-clinical implementation of FLASH-RT** *PHYSICS IN MEDICINE AND BIOLOGY*
  Ashraf, M., Rahman, M., Cao, X., Duval, K., Williams, B. B., Hoopes, P., Gladstone, D. J., Pogue, B. W., Zhang, R., Bruza, P.
  2022; 67 (9)
- **Quantification of Oxygen Depletion During FLASH Irradiation In Vitro and In Vivo** *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*
  Cao, X., Zhang, R., Esipova, T. V., Allu, S., Ashraf, R., Rahman, M., Gunn, J. R., Bruza, P., Gladstone, D. J., Williams, B. B., Swartz, H. M., Hoopes, P., Vinogradov, et al
  2021; 111 (1): 240-248
- **Spatial and temporal dosimetry of individual electron FLASH beam pulses using radioluminescence imaging** *PHYSICS IN MEDICINE AND BIOLOGY*
  Rahman, M., Ashraf, M., Zhang, R., Gladstone, D. J., Cao, X., Williams, B. B., Jack Hoopes, P., Pogue, B. W., Bruza, P.
  2021; 66 (13)
- **Electron FLASH Delivery at Treatment Room Isocenter for Efficient Reversible Conversion of a Clinical LINAC** *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*
  Rahman, M., Ashraf, R., Zhang, R., Bruza, P., Dexter, C. A., Thompson, L., Cao, X., Williams, B. B., Hoopes, P., Pogue, B. W., Gladstone, D. J.
  2021; 110 (3): 872-882
- **The Conversion of Clinical Linear Accelerators for FLASH Radiation Delivery Reply** *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*
  Rahman, M., Ashraf, M., Zhang, R., Bruza, P., Dexter, C. A., Thompson, L., Cao, X., Williams, B. B., Hoopes, P., Pogue, B. W., Gladstone, D. J.
  2021; 110 (3): 909-910
- **Spatiotemporal Dose Characterization of An Electron FLASH Beam from a LINAC Using Radioluminescence and Cherenkov Imaging**
  Rahman, M., Ashraf, M., Zhang, R., Gladstone, D., Cao, X., Williams, B., Hoopes, J., Pogue, B., Bruza, P.
  WILEY.2021
- **Pulse Resolved Beam Characterization and Feedback for FLASH-RT Using Radioluminescent Dosimeters**
  Ashraf, M., Rahman, M., Zhang, R., Williams, B., Hoopes, J., Gladstone, D., Pogue, B., Bruza, P.
  WILEY.2021
- **Electron FLASH in Clinical Setting: LINAC Conversion, Commissioning and Treatment Planning**
  Rahman, M., Ashraf, M., Gladstone, D., Bruza, P., Jarvis, L., Schaner, P., Cao, X., Pogue, B., Hoopes, J., Zhang, R.
  WILEY.2021
- **Technical Note: Single-pulse beam characterization for FLASH-RT using optical imaging in a water tank** *MEDICAL PHYSICS*
  Ashraf, M., Rahman, M., Zhang, R., Cao, X., Williams, B. B., Hoopes, P., Gladstone, D. J., Pogue, B. W., Bruza, P.
  2021; 48 (5): 2673-2681
- **Treatment Planning System for Electron FLASH Radiotherapy: Open-source for Clinical Implementation.** *International journal of radiation oncology, biology, physics*

Rahman, M., Ashraf, M. R., Gladstone, D. J., Bruza, P., Jarvis, L. A., Schaner, P. E., Cao, X., Pogue, B. W., Hoopes, P. J., Zhang, R.
2021

- **Dosimetry for FLASH Radiotherapy: A Review of Tools and the Role of Radioluminescence and Cherenkov Emission** *FRONTIERS IN PHYSICS*
  Ashraf, M., Rahman, M., Zhang, R., Williams, B. B., Gladstone, D. J., Pogue, B. W., Bruza, P.
  2020; 8
- **Real Time Plan Verification of Radiotherapy Treatment Plans Using Couch and Gantry Mounted Cameras**
  Ashraf, M., Bruza, P., Pogue, B., Gladstone, D., Williams, B.
  WILEY.2020: E474-E475
- **High Resolution Optical Imaging of 4 & 5 Millimeter Beams: A Small Field Dosimetry Technique**
  Ashraf, M., Bruza, P., Zhang, R., Rahman, M., Williams, B., Pogue, B., Gladstone, D.
  WILEY.2020: E463
- **Optical imaging provides rapid verification of static small beams, radiosurgery, and VMAT plans with millimeter resolution** *MEDICAL PHYSICS*
  Ashraf, M., Bruza, P., Pogue, B. W., Nelson, N., Williams, B. B., Jarvis, L. A., Gladstone, D. J.
  2019; 46 (11): 5227-5237
- **Real-Time 3D Scintillation Imaging Enables Rapid End-To-End Verification of Online Adaptive Replanning On MR-Linac**
  Bruza, P., Ashraf, M., Cammin, J., Maraghechi, B., Pogue, B., Green, O.
  WILEY.2019: E500
- **Remote, Real-Time Optical Imaging of Small Beamlets in Radiotherapy**
  Ashraf, M., Bruza, P., Nelson, N., Gladstone, D., Williams, B., Jarvis, L., Pogue, B.
  WILEY.2019: E366
- **Technical Note: Time-gating to medical linear accelerator pulses: Stray radiation detector** *MEDICAL PHYSICS*
  Ashraf, M., Bruza, P., Krishnaswamy, V., Gladstone, D. J., Pogue, B. W.
  2019; 46 (2): 1044-1048
- **Stray Radiation Triggered Imaging of Clinical Radiotherapeutic Beams**
  Ashraf, M., Bruza, P., Pogue, B.
  WILEY.2018: E477