

Curriculum Vitae
Dong Han, PhD
Department of Radiation Oncology
New York Proton Center

Date 12. 1, 2023

Contact Information

Business Address: Department of Radiation Oncology
New York Proton Center
225 E 126th St, New York, NY 10035

Business phone number: (646) 968-9012
Email: ghan@nyproton.com

Education

2000-2007 M.S. Physics, Fudan University
2007-2010 M.S. Astrophysics and Planetary Science, University of Colorado at Boulder
2011-2018 Ph.D. Medical Physics, Virginia Commonwealth University

Residency Training

2018-2020 Resident in Therapeutic Medical Physics, Johns Hopkins University

Certification

2022 Certificate of America Board of Radiology

Employment History

Academic Appointment

2022 - Present, Faculty of Medical Physics, New York Proton Center
2020-2022 Assistant Professor, University of Maryland, School of Medicine

Professional Society Membership

2011-present Member, American Association of Physicists in Medicine (AAPM)
2018-present Member, American Society for Therapeutic Radiology and Oncology (ASTRO)

Honors and Awards

- 2012 *Students use SDC data to improve understanding of space dust”, **Project of New Horizons to Pluto**, LASP, CU-Boulder*
- 2014 Travel Grant, Virginia Commonwealth University Graduate School
- 2016 **Editor’s Pick**, Medical Physics Journal
- 2016 Science Council Session Finalist, AAPM Annual Meeting
- 2017 **Farrington Daniels Award**, AAPM Annual Meeting
- 2019 **Editor’s Pick**, Medical Physics Journal

Clinical Activities

- 2018-2020 National Proton Center, Johns Hopkins University
- Participating in, acceptance testing, commissioning, QA and calibration for Hitachi PROBEAT proton system
 - Planning various sites with RayStation TPS V9
 - Monthly and annual QA for the proton and photon facilities.
 - Patient specific QA
- 2020-2022 Maryland Proton Treatment Center, University of Maryland, Baltimore
- Monthly and Annual QA and calibration for Varian ProBeam proton system
 - Commissioning of RayStation V11 and ProBeam Rough Steering
 - Chart Checking using Aria R&V system
 - 2022 - Present

2023-Present New York Proton Center

Editorial Service

- 2016-present Manuscript Reviewer, *Medical Physics Journal*
- 2018-present Manuscript Reviewer, *Physics in Medicine and Biology*
- 2018-present Manuscript Reviewer, *Journal of Applied Clinical Medical Physics*
- 2021-present Reviewer Editor, *Frontiers in Oncology*

Grant Support

- 2022-present Dong Han (Co-PI)

“Studying the relationship between linear energy transfer (LET) and FLASH sparing effect of proton FLASH radiation”
Source: 2022 Seeds Grant, Department of Radiation Oncology, School of Medicine, University of Maryland
Direct Funds: \$11,000.

Publications

Selected Peer-reviewed journal articles

1. T. Ji, Z. Feng, E. Sun, S. Ng, L. Su, Y. Zhang, **D. Han**, S. Han-Oh, L. Lordachita, J. Lee, P. Kazazides, M. Bell, J. Wong and K. Ding, A phantom-based analysis for tracking intra-fraction pancreatic tumor motion by Ultrasound imaging during radiation therapy, Accepted by *Radiation Oncology - Frontiers*
2. H. Hooshangnejad, **D. Han**, Z. Feng, E. Sun and K. Ding, Systematic study of the iodinated rectal hydrogel spacer material discrepancy on the accuracy of proton dosimetry, Accepted by *J. Appl. Clin. Phys.*
3. W. Yao, B. Zhang, **D. Han**, J. Polf, S. Vedam, G. Lasio and B. Yi, Use of CBCT plus plan robustness for reducing QACT frequency in intensity-modulated proton therapy: Head-and-neck cases, DOI: 10.1002/MP.15915; *Med. Phys.*, **49** (11), 6794-6801, 2022
4. **D. Han**, H. Hooshangnejad, C. Chen and K. Ding, A beam-specific optimization target volume for stereotactic proton pencil beam scanning therapy for locally advanced pancreatic cancer, *Adv. in Radiation Oncology* **6** (6), 100757, 2021
5. S. Zhang, **D. Han**, D. G. Politte, J. F. Williamson and J. A. O’Sullivan, Impact of integrated statistical dual-energy CT reconstruction on proton stopping power mapping accuracy, *Med. Phys.*, **45** (5), 2129–2142, 2018
6. S. Zhang, **D. Han**, J. F. Williamson, T. Zhao, D. G. Politte, B. R. Whiting and J. A. O’Sullivan, Experimental implementation of a joint statistical image reconstruction method for proton stopping power mapping from dual-energy CT data, *Med. Phys.*, **46** (1), 273–285, 2019 *Editor’s Pick*
7. **D. Han**, M. Porrás-Chaverri, J. A. O’Sullivan, D. G. Politte and J. F. Williamson, On the accuracy of parametric two-parameter photon cross-section models on dual-energy CT applications. *Med. Phys.* **44** (6), 2438–2446, 2017
8. **D. Han**, J. V. Siebers and J. F. Williamson, A linear, separable two-parameter model for dual energy CT imaging of proton stopping power computation, *Med. Phys.* **43** (1), 600–612, 2016, *Editor’s Pick and Farrington Daniels Award*
9. Y. Chen, J. A. O’Sullivan, D. G. Politte, J. D. Evans, **D. Han**, B. R. Whiting and J. F. Williamson, Line integral alternating minimization algorithm for dual-energy x-ray CT image reconstruction, *IEEE Trans. Med. Imag.* **35**(2), 685–698, 2016.
10. **D. Han**, A. R. Poppe, M. Piquette, E. Grün, and M. Horanyi, Constraints on dust production in the Edgeworth-Kuiper Belt from Pioneer 10 and New Horizons measurements, *Geophys. Res. Lett.*, **38**, L24102, 2011.

11. **D. Han**, W. Guo, P. Xu, and R. Liang, Theoretical Computation for Non-equilibrium Air Plasma Electrical Conductivity at Atmospheric Pressure, *Chin. Phys. Lett.* **24**, 8, 2007

Abstracts and/or Proceedings

1. **D. Han**, A. Sampson, D. G. Politte, J. A. O’Sullivan, J. V. Siebers and J. F. Williamson Accuracy of Dual–Energy CT Photon Cross–Section Mapping Using a Non-Separable Two Parameter Cross-Section Model, AAPM Annual Meeting 2012.
2. **D. Han**, E. Weiss, G. Hugo, J. C. Ford, J. F. Williamson and K. Ding, Static Breath-Hold MRI and Deformable Image Registration Based Measurement of Pulmonary Function: Contrast Enhanced V.S. Non-Contrast Lung MRIs, Mid-Atlantic Chapter Meeting of AAPM, 2012.
3. **D. Han**, J. V. Siebers and J. F. Williamson Quantitative Dual-Energy CT Mapping for Proton Stopping Power, AAPM Annual Meeting, 2014
4. S. Zhang, **D. Han**, D. G. Politte, M. A. Porras-Chaverri, B. R. Whiting, J. F. Williamson and J. A. O’Sullivan, Basis Vector Model Based Method for Proton Stopping Power Estimation From Experimental Dual Energy CT Data, AAPM Annual Meeting 2016
5. **D. Han**, D. Vile, M. Rosu and J. Palta, What Does It Take to Correctly Assess the High Failure Modes of an Advanced Radiotherapy Procedure Such as Stereotactic Body Radiation Therapy? AAPM Annual Meeting, 2016
6. **D. Han**, D. G. Politte, J. F. Williamson and J. A. O’Sullivan. Comparison of Integrated and Post-Reconstruction Dual-Energy CT Proton Stopping Power Ratio Estimation Approaches. AAPM Annual Meeting, 2017
7. **D. Han**, S. Zhang, P. Klahr, B Whiting, and J. Williamson. On deriving x-ray CT spectra from beam hardening correction polynomials. AAPM Annual Meeting, 2018
8. **D. Han**, S. Zhang, and K. Ding, A simulation study of effect of dual-energy CT spectra on stopping power accuracy estimation via image-domain method, PTCOG 59th Conference 2020
9. **D. Han**, H. Hooshangnejad, C. Chen and K. Ding, A dosimetric study of optimization target volumes for CBCT-guided spot-scanning stereotactic body proton therapy for locally advanced pancreatic cancer patients, PTCOG 59th Conference 2020

10. **D. Han**, H. Hooshangnejad, C. Chen and K. Ding, A novel use of hydrogel as a dual-buffer in the stereotactic body proton therapy for locally advanced pancreatic cancer, ASTRO 62nd Annual Meeting, 2020
11. **D. Han**, H. Hooshangnejad, J. Jatzak and K. Ding, Dosimetric Impact of Materials Override of Hydrogel Spacer in Stereotactic Body Proton Therapy (SBPT) for Locally Advanced Pancreas Cancer (LAPC), AAPM Annual Meeting, 2021
12. W. Yao, B. Zhang, **D. Han**, J. Polf, S Vedam, G. Lasio and B. Yi, Use of CBCT for Reducing QACT Frequency in Intensity Modulated Proton Therapy: Head and Neck, AAPM Annual Meeting, 2021
13. **D. Han**, H. Hooshangnejad, J. Jatzak, W.Yao, J. Xu and K. Ding, Patient-specific duodenal hydrogel spacer as a dosimetric buffer for proton therapy, AAPM Annual Meeting, 2022
14. **D. Han**, N. Biswal, B. Zhang, M. Witek and B. Yi, The Pearson correlation coefficient of target and beam path length using cone-beam CT images as adaptive planning indicators of head and neck patients undergoing proton therapy, AAPM Annual Meeting, 2022
15. **J. Xu**, T. Cosely, T. Bouton, B.Zhang, D. Han, J. Zhou and S.Chen, Evaluation of VMAT & IMRT planning strategies for advanced prostate cancer patients with bilateral hip prostheses, AAPM Annual Meeting, 2022

Invited Presentations

1. **D. Han** and M. Horányi, Simulation of Kuiper Belt Dust Dynamics, National Space Science Center, Chinese Academy of Science, Beijing, China, Apr., 2010