DAVID H. THOMAS, Ph.D. DABR

CURRICULUM VITAE
November 2023

Associate Professor, Department of Radiation Oncology
University of Colorado School of Medicine

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EDUCATION:

Institution	Degree	Date
University of California Los Angeles	Medical Physics Resident (*Therapy*)	06/2016
University of California Los Angeles	Certificate *Medical Physics*	06/2016
University of Edinburgh	Ph.D. *Medical Physics*	07/2010
Georgia Institute of Technology	M.S. *Electrical & Computer Engineering*	05/2005
University of St Andrews	M.S. *Physics*	05/2004

PROFESSIONAL EXPERIENCE:

Institution	Position	Date
University of Colorado School of Medicine	Associate Professor	07/2022 – present
University of Colorado School of Medicine	Assistant Professor	07/2016 – 06/2022
University of California Los Angeles	Postdoctoral Fellow (*Radiation Oncology*)	09/2012 – 07/2014
University of Edinburgh	Postdoctoral Fellow (*Medical Physics*)	09-2010 – 08/2012

LICENSURE AND BOARD CERTIFICATION:

2018 – present	Qualified Expert Registered Medical Physicist (#305), Colorado Department of Public Health and Environment,
2017 – present	Diplomat American Board of Radiology: Therapeutic Medical Physics.

PROFESSIONAL ACTIVITIES:

2019 – present	Alternate Radiation Safety Officer.
2018 – 2023	QI Committee, Department of Radiation Oncology.
2016 – 2018	Department representative in School of Medicine Faculty Senate.
2020 – 2022	University of Colorado Cancer Center Protocol Review and Monitoring System.
2022	NIH CSR reviewer for IGIS study section.
2023 – present	AAPM Committee member: Radiation Therapy Patient Safety Subcommittee.

RESEARCH EXPERIENCE:

- PI for NIH funded multi-disciplinary lab with over $600k in funding over the last 5years.
- 44 total peer-reviewed publications, 85 conference publications.
- 9 awards for original research, including two Best-in-Physics Awards at the AAPM Annual Meeting (First Author and Senior Author).
- Currently lead 2 collaborative projects with local and international colleagues.
    - Lead PI on an NIH-funded collaboration with colleagues in Biomedical Engineering at CU Boulder and University of Florence (Italy).
    - Lead PI on a Cancer center funded collaboration with Computer Science at CU Boulder, Max Plank Institute (Germany) and University of Grenoble (France).

GRANT SUPPORT (last 5 years):

Funding Source	**Number of Grants**	**Total Costs**
Foundation (Cancer Center, etc.):	6	$260,000
NIH:	1	$375,000
Industry:	2	$10,000

CURRENT SUPPORT:

10/2023 – 09/2024
CU Anschutz Cancer center
Title: *"Computer vision enhanced breast DIBH-RT."*
Total Costs Awarded: $100,000. Role: PI.

01/2023 – 12/2023
Wings of Hope/CU Anschutz Cancer center
Title: *"Computer vision assisted alignment for pancreatic stereotactic body radiation therapy (SBRT)."*
Total Costs Awarded: $50,000 (including department match). Role: PI.

07/2022 – 06/2024
NIH/NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING
Title: *"R21: Endoskeletal nanodrops for x-ray acoustic dosimetry"*
Total Costs Awarded: $375,000. Role: PI.

PAST SUPPORT:

01/2018 – 01/2019
Agency: American Cancer Society
Title: "*High Resolution X-Ray induced Acoustic Computed Tomography for in-vivo dosimetry and imaging applications*."
Total Costs Awarded: $60,000 (including department match). Role: PI.

07//2018 – 06/2019
Cancer League of Colorado
Title: *"X-Ray Acoustic Computed Tomography guided Adaptive Radiotherapy."*
Total Costs Awarded: $30,000. Role: PI.

05//2018 – 04/019
Colorado Clinical and Translational Sciences Institute
Title: *"High Resolution X-Ray induced Acoustic Tomography for in-vivo dosimetry applications"*
Total Costs Awarded: $20,000. Role: PI.

HONORS AND AWARDS:

07/2023 Best-in-Physics Award, to be presented at 65th AAPM Annual Meeting, *Senior Author*.
09/2021 CU Rad-Onc Quarterly Award Best Team Players, Reliability Award.
05/2016 Norm Baily Research Award, 1st Place, AAPM Southern California Chapter.
05/2015 Norm Baily Research Award, 1st Place, AAPM Southern California Chapter.
05/2014 UCLA Chancellor's Award for Postdoctoral Research, Nominee.
05/2014 Norm Baily Research Award, 1st Place, AAPM Southern California Chapter.
07/2013 Best-in-Physics Award, AAPM 55th Annual Meeting, *First Author*.
05/2013 Norm Baily Research Award, 1st Place, AAPM Southern California Chapter.
02/2011 Young Investigators Technical Research Award 16th European Contrast Ultrasound Symposium
07/2005 The Royal Society JM Lessells Scholarship.
07/2004 Bobby Jones Post-graduate Fellowship.

INTELLECTUAL PROPERTY AND PATENTS:

2023 **DH Thomas** and D Gurari "Systems and methods for stereotactic guided radiation therapy using computer vision systems patient specific body models".
2020 **DH Thomas**, "Methods and System for Reducing Potential for Errors in Patient Positioning by Automatic Positioning and Device Detection." US Provisional patent application 62/978,695.
2017 **DH Thomas** & Moyed, M, "'Pseudo-4D' Localizer Radiographs: A Novel Imaging Technique for Evaluating Motion at Simulation".

BOOK CHAPTERS:

2016 "*General Physics Principles in Brachytherapy*", Handbook of Image-Guided Brachytherapy, Sang-June Park and **David H. Thomas,** Springer-Nature Publishing, ISBN: 978-3-319-44825-1.
2014 "*Intra-fraction Motion in Radiation Oncology*", Advances in Medical Physics: **David H. Thomas** and Daniel A. Low. Medical Physics Publishing, ISBN: 9781930524637.

CLINICAL TRIALS AND PROTOCOLS:

2019 Pilot Study of Dynamic Contrast Enhanced Computed Tomography (DCE-CT) Imaging for the assessment of radiation therapy outcome for liver cancer patients.
Role: Co-PI.

REVIEW ACTIVITIES:

Scientific Reviewer: NIH CSR reviewer for IGIS study section (2022).
AAMP Annual Meeting, (2017 – 2022).
Journal Editor: British Journal of Radiology | Open.
Senior Medical Physics editor (2020- present).
Reviewer (ad hoc): Medical Physics, Physics in Medicine, and Biology,
Journal of Applied Clinical Medical Physics.

MENTORING EXPERIENCE:

2018 – present Deputy Residency Director, CU Anschutz Medical Physics Residency Program.

2019 – 2021 Mentor for a post-doctoral research fellow with no previous Medical Physics experience.

- Fellow published two papers as first author and multiple AAPM conference presentations, and successfully entered a residency position.
- Fellow is now Assistant Professor Medical Physicist Faculty at Washington University in St. Louis.

2022 – present Mentor for three graduate students and one post-doctoral research fellow.

- My current graduate students have achieved multiple conference presentations in their first year of PhD.
- Students have won Best in Physics and MedPhys Slam awards.

2020 – present Primary mentor, SRS/SBRT rotation.

2017 – present Secondary mentor, Workflow/Detectors rotation

2020 – 2022 Primary mentor, Special Research and Topics rotation.

2018 – 2020 Primary mentor, Imaging and Special Procedures rotation.

2017 – 2021 Primary Mentor, Medical Physics Residency Program, ABR Boards Preparation Course

2017 – 2020 Secondary mentor, SRS/SBRT rotation

LEADERSHIP EXPERIENCE:

- Department lead for ARIA R&V.
  - Took the lead on transitioning the department from Mosaiq to ARIA in 2019.
- Lead a system-wide working-group, with representatives from physicians/ physics/therapy/dosimetry.
- Led system-wide projects to update and match physics beam-models for multiple centers/satellites when CU Anschutz expanded from one location site to its current four locations (7 LINACS).
- Department lead for updating and standardizing documentation, including QA spreadsheets, training manuals (department wiki), TPS QA automation, etc.
- Department lead for Clinical and Research Data Analysis and Reporting.

CLINICAL EXPERIENCE:

- Academic clinical medical physicist with over 10 years' experience in academic radiation oncology centers.
  - Lead physicist for the Stereotactic Radiosurgery (SRS) treatment machine.
  - Provide physics planning services for the SRS program.
  - Provide physics services to the UC Gamma Knife center.
  - Commissioning experience of Varian Truebeam and ViewRay machines.
  - Routine QA experience of Varian Truebeam, STx, Edge, Elekta Synergy, Tomotherapy, ViewRay, Nucletron Microseletor and Varian Varisource HDR afterloaders, Exactrac.
  - Extensive brachytherapy experience with LDR prostate seeds, eye plaques, HDR gyn procedures.
  - Extensive treatment planning experience with Varian Eclipse, Tomotherapy, ViewRay.

TEACHING EXPERIENCE:

2019 – present	'Adjunct' instructor for the UCLA CAMPEP Accredited Certificate Program in Medical Physics.
2018 – present	Developed monthly study and review sessions for the physics residents within the department, with a focus on ABR board preparations.
2017 – present	Teach 5 hours of lecture per academic year for radiation oncology physics course to physics residents, physics post-docs and physician residents.
2011	Lecturer, Biomedical Imaging M.S., University of Edinburgh, Scotland, U.K.
2010	Lecturer, Postgraduate Medical Ultrasound course, Glasgow Caledonian University

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PUBLICATIONS:

PAPERS IN REFEREED JOURNALS [44]:

1. **Thomas DH**, Schubert LK, Vinogradskiy Y, et al. Deep Learning approach for automatic detection and identification of patient positioning devices for radiation therapy. *Medical Physics.* 2020.
2. **Thomas DH**, Miller B, Rabinovitch R, et al. Integration of automation into an existing clinical workflow to improve efficiency and reduce errors in the manual treatment planning process for total body irradiation (TBI). *Journal of Applied Clinical Medical Physics.* 2020.
3. Forghani F, Mahl A, Patton TJ, et al. [**Thomas, DH** = senior author] Simulation of x-ray-induced acoustic imaging for absolute dosimetry: Accuracy of image reconstruction methods. *Medical Physics.* 2020;47(3):1280-1290.
4. Schubert LK, Hendrickson K, … **Thomas, DH**, Miften M, et al. The current state of physics plan review training in medical physics residency programs in North America. *Practical radiation oncology.* 2019.
5. O'Connell D, **Thomas DH**, Lewis JH, et al. Safety-oriented design of in-house software for new techniques: A case study using a model-based 4 DCT protocol. *Medical physics.* 2019;46(4):1523-1532.
6. **Thomas DH**, Tan J, Neylon J, et al. Investigating the minimum scan parameters required to generate free-breathing motion artefact-free fast-helical CT. *The British journal of radiology.* 2018;91(1082):20170597.
7. b, Santhanam A, Kishan AU, et al. Initial clinical observations of intra-and interfractional motion variation in MR-guided lung SBRT. *The British journal of radiology.* 2018;91(xxxx):20170522.
8. O'Connell D, Ruan D, **Thomas DH**, et al. A prospective gating method to acquire a diverse set of free-breathing CT images for model-based 4DCT. *Physics in medicine and biology.* 2018.
9. O'Connell D, **Thomas DH**, Lamb JM, et al. Dependence of subject-specific parameters for a fast helical CT respiratory motion model on breathing rate: an animal study. *Physics in Medicine & Biology.* 2018;63(4):04NT04.
10. Ginn JS, O'Connell D, **Thomas DH**, Low DA, Lamb JM. Model-Interpolated Gating for Magnetic Resonance Image–Guided Radiation Therapy. *International Journal of Radiation Oncology* Biology* Physics.* 2018;102(4):885-894.
11. Efthymiou K, Pelekasis N, Butler M, **Thomas DH**, Sboros V. The effect of resonance on transient microbubble acoustic response: Experimental observations and numerical simulations. *The Journal of the Acoustical Society of America.* 2018;143(3):1392-1406.
12. Shaverdian N, Yang Y, Hu P, …,**Thomas DH**, et al. Feasibility evaluation of diffusion-weighted imaging using an integrated MRI-radiotherapy system for response assessment to neoadjuvant therapy in rectal cancer. *The British journal of radiology.* 2017;90(1071):20160739.
13. Sboros V, Butler M, Perperidis A, …,**Thomas DH**, et al. Vessel Classification Using Ultrasound Contrast Imaging. *Ultrasound in Medicine and Biology.* 2017;43:S42.

14. O'Connell D, Shaverdian N, Kishan A, …,**Thomas DH**, et al. Comparison of lung tumor motion measured using a model-based 4DCT technique and a commercial protocol. *Practical Radiation Oncology.* 2017.
15. O'Connell D, **Thomas DH**, Dou T, et al. Adaptive weighted median filtering for reduced blurring when fusing co-registered fast helical CT images. *Biomedical Physics & Engineering Express.* 2017;3(6):067002.
16. McClelland JR, Modat M, Arridge S, …,**Thomas DH**, et al. A generalized framework unifying image registration and respiratory motion models and incorporating image reconstruction, for partial image data or full images. *Physics in Medicine & Biology.* 2017;62(11):4273.
17. Low DA, Yang L, Chen J, …,**Thomas DH**, et al. Analysis of motion blurring artifact in fast helical free-breathing thoracic CT scans. *Medical Physics.* 2017;44(4):1456-1461.
18. Lamb JM, Ginn JS, O'Connell DP, …,**Thomas DH**, et al. Dosimetric validation of a magnetic resonance image gated radiotherapy system using a motion phantom and radiochromic film. *Journal of Applied Clinical Medical Physics.* 2017;18(3):163-169.
19. Lamb J, Cao M, Kishan A, …,**Thomas DH**, et al. Online Adaptive Radiation Therapy: Implementation of a New Process of Care. *Cureus.* 2017;9(8).
20. Yang Y, Cao M, Sheng K, …,**Thomas DH**, et al. Longitudinal diffusion MRI for treatment response assessment: Preliminary experience using an MRI-guided tri-cobalt 60 radiotherapy system. *Medical physics.* 2016;43(3):1369-1373.
21. **Thomas DH**, Ruan D, Williams P, et al. Is there an ideal set of prospective scan acquisition phases for fast-helical based 4D-CT *Physics in Medicine & Biology.* 2016;61(23):N632.
22. O'Connell D, Shaverdian N, Kishan A, et al. Clinical Validation and Implementation of the 5DCT Technique for Breathing-Gated Image Generation for Lung Cancer Treatment Planning. *International Journal of Radiation Oncology• Biology• Physics.* 2016;96(2):E687.
23. Nguyen D, **Thomas DH**, Cao M, O'Connor D, Lamb J, Sheng K. Computerized triplet beam orientation optimization for MRI-guided Co-60 radiotherapy. *Medical physics.* 2016;43(10):5667-5675.
24. Liu J, Zhang X, Zhang X, …,**Thomas DH**, et al. 5D respiratory motion model based image reconstruction algorithm for 4D cone-beam computed tomography. *Inverse Problems.* 2015;31(11):115007.
25. Kamrava M, Agazaryan N, Cao M, …,**Thomas DH**, et al. Assessment of Intrafraction Motion of the Vaginal Apex During Postoperative MRI-Guided Radiation Therapy. *International Journal of Radiation Oncology• Biology• Physics.* 2016;96(2):E302.
26. Dou TH, Min Y, Neylon J, **Thomas DH**, Kupelian P, Santhanam AP. Fast simulated annealing and adaptive Monte Carlo sampling based parameter optimization for dense optical-flow deformable image registration of 4DCT lung anatomy. Paper presented at: Medical Imaging 2016: Image-Guided Procedures, Robotic Interventions, and Modeling2016.
27. Chow PE, **Thomas DH**, Agazaryan N, et al. Dosimetric effects of couch position variability on treatment plan quality with an MRI-guided Co-60 radiation therapy machine. *Medical physics.* 2016;43(8Part1):4514-4519.
28. Ruan D, **Thomas DH**, Low DA. Objective function to obtain multiple representative waveforms for a novel helical CT scan protocol. *Medical Physics.* 2015;42(3):1164-1169.
29. O'Connell DP, **Thomas DH**, Dou TH, et al. Comparison of breathing gated CT images generated using a 5DCT technique and a commercial clinical protocol in a porcine model. *Medical physics.* 2015;42(7):4033-4042.
30. **Thomas DH**, Lamb J, White B, et al. A Novel Fast Helical 4D-CT Acquisition Technique to Generate Low-Noise Sorting Artifact–Free Images at User-Selected Breathing Phases. *International Journal of Radiation Oncology* Biology* Physics.* 2014;89(1):191-198.
31. Dou TH, **Thomas DH**, O'Connell DP, Lamb JM, Lee P, Low DA. A Method for Assessing Ground-Truth Accuracy of the 5DCT Technique. *International Journal of Radiation Oncology* Biology* Physics.* 2015;93(4):925-933.
32. Dou TH, **Thomas DH**, O'Connell D, Bradley JD, Lamb JM, Low DA. Simulation of 4DCT tumor motion measurement errors. *Medical physics.* 2015;42(10):6084-6089.

33. White BM, Santhanam A, **Thomas DH**, et al. Modeling and incorporating cardiac-induced lung tissue motion in a breathing motion model. *Medical physics.* 2014;41(4).
34. **Thomas DH**, Butler M, Pelekasis N, Anderson T, Stride E, Sboros V. The acoustic signature of decaying resonant phospholipid microbubbles. *Physics in Medicine & Biology.* 2013;58(3):589.
35. Low DA, White BM, Lee PP, …,**Thomas DH**, et al.. A novel CT acquisition and analysis technique for breathing motion modeling. *Physics in Medicine & Biology.* 2013;58(11):L31.
36. Jani SS, Robinson CG, Dahlbom M…,**Thomas DH**, et al.. A Comparison of Amplitude-Based and Phase-Based Positron Emission Tomography Gating Algorithms for Segmentation of Internal Target Volumes of Tumors Subject to Respiratory Motion. *International Journal of Radiation Oncology* Biology* Physics.* 2013;87(3):562-569.
37. **Thomas DH**, Butler M, Anderson T, et al. The "quasi-stable" lipid shelled microbubble in response to consecutive ultrasound pulses. *Applied Physics Letters.* 2012;101(7):071601.
38. Sboros V, Averkiou M, Lampaskis M, …,**Thomas DH**, et al. Imaging of the ovine corpus luteum microcirculation with contrast ultrasound. *Ultrasound in Medicine and Biology.* 2011;37(1):59-68.
39. Butler MB, **Thomas DH**, Silva N, Pye SD, Sboros V. On the acoustic response of microbubbles in arteriole sized vessels. *Applied Physics Letters.* 2011;99(19):193702.
40. **Thomas DH**, Looney P, Butler M, et al. The fate of resonant and off-resonant microbubble signals in response to consecutive imaging pulses. Paper presented at: Ultrasonics Symposium (IUS), 2010 IEEE2010.
41. **Thomas DH**, Butler M, Dermitzakis A, Anderson T, McDicken W, Sboros V. The acoustic scatter from single bisphere microbubbles. *Ultrasound in Medicine and Biology.* 2010;36(11):1884-1892.
42. **Thomas DH**, Looney P, Steel R, et al. Acoustic detection of microbubble resonance. *Applied Physics Letters.* 2009;94(24):243902.
43. **Thomas DH**, Butler M, Anderson T, et al. Single microbubble response using pulse sequences: initial results. *Ultrasound in Medicine and Biology.* 2009;35(1):112-119.
44. Butler MB, **Thomas DH**, Pye SD, Moran CM, McDicken WN, Sboros V. The acoustic response from individual attached and unattached rigid shelled microbubbles. *Applied Physics Letters.* 2008;93(22):223906.

CONFERENCE ABSTRACTS AND PRESENTATIONS [85]:

1 65th American Association of Physicists in Medicine (AAPM) Annual Meeting and Exhibition - BEST IN PHYSICS - "Computer Vision Assisted Alignment for SBRT" Atharva Peshkar, D Gurari, **DH Thomas**., 2023 July.

2 American Radium Society, Lahaina, Hi. "Computer Vision assisted Collision Avoidance for Radiation Therapy", **DH Thomas**, Moyed Miften, Brian Kavanagh, Bernard Trip Jones, 2023 May.

3 65th American Association of Physicists in Medicine (AAPM) Annual Meeting and Exhibition - Will Franz, M Borden, **DH Thomas** "Vaporizable Endoskeletal Droplets for In Vivo Dosimetry." Accepted for oral presentation on 7/23/23. Link to conference: https://w4.aapm.org/meetings/2023AM/

4 97th ACS Colloid and Surface Science Symposium - "Vaporizable endoskeletal droplets for contrast enhanced x-ray acoustic imaging." Will Franz, **DH Thomas**, M Borden Accepted for poster presentation on 4/10/23. Link to conference: https://conferences.coned.ncsu.edu/colloids2023/

5 Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C) - "Model for heat conduction in vaporizable endoskeletal droplet in response to x-ray photon absorption." Will Franz,

DH Thomas, M Borden, Accepted for oral presentation on 4/2/23. Link to conference website: https://sb3c.org/

6 **DH Thomas**, F Forghani, A Mahl, B Jones, M Borden, M Miften (2020), A fast and effective denoising solution using deep learning for real time X-ray Acoustic Computed Tomography Bulletin of the American Physical Society 65.

7 F Forghani, A Mahl, B Jones, M Borden, M Miften, **DH Thomas** (2020), Analysis of experimental acoustic waves induced by high energy pulsed X-ray beams, Bulletin of the American Physical Society 65.

8 F Forghani, A Mahl, G Shakya, M Borden, T Patton, Y Vinogradskiy, B Jones, M Miften**, DH Thomas**, (2020), Effect of X-Ray Irradiation On the Ultrasound Imaging Signal of a Novel Photoacoustic Contrast Agent, AAPM,

9 M Lauria, D O'Connell , N Agazaryan , J Lewis , J Lamb , **DH Thomas**, P Lee, D Low (2019), Clinical Introduction of 5DCT Simulation for Lung Cancer, AAPM.

10 F Forghani, **DH Thomas** (2019), An Analysis of X-Ray Induced Acoustic Imaging and Its Accuracy for Absolute Dosimetry, AAPM.

11 T Patton, Q Diot , B Jones , L Olsen , Y Vinogradskiy , K Goodman , T Schefter , **DH Thomas** (2019), An Efficient Workflow for Generation and Refinement of a Knowledge Based Planning Model for Pancreas SBRT Using Automation, AAPM.

12 J Ginn, D O'Connell , **DH Thomas**, D Low, J Lamb (2018), Model-Interpolated Gating for MRI-Guided Radiotherapy, AAPM.

13 D O'Connell, **DH Thomas**, J Lewis , N Agazaryan , M Cao , S Tenn , P Lee , D Low (2018), Safety-Oriented Design of In-House Software for Translating New Techniques From Research to Clinical Practice: A Case Study Using a Model-Based 4DCT Protocol, , AAPM.

14 D Low, D O'Connell , **DH Thomas** , T Dou , J Lewis , P Lee (2018), Is There a Better Way Than 4DCT to Characterize Breathing Motion, AAPM.

15 J Ginn1, D O'Connell, **DH Thomas** , N Agazaryan , M Cao , Y Yang , D Low , J Lamb (2017), A Preliminary Evaluation of Respiratory Motion Modeling at 0.35T for MRI-Guided Radiotherapy, Medical Physics, TU-FG-FS2-2.

16 D O'Connell, G Chee , J Lewis , **DH Thomas** , L Yang , P Lee , D Low (2017) Breathing Motion Model Estimation From Deformable Registration of CBCT Projections, , Medical Physics , MO-F-205-5.

17 **DH Thomas*,** W Campbell , J Faught , B Jones , K Goodman , M Miften (2017) 'Pseudo-4D' Localizer Radiographs: A Novel Imaging Technique for Evaluating the Motion of Implanted Fiducial Markers at Simulation, , Medical Physics, SU-E-601-8

18 O'Connell, D., N. Shaverdian, A. Kishan, **D.H. Thomas**, L. Yang, J. Lewis, J. Lamb, M. Cao, S. Tenn and P. Lee (2016). "Clinical Validation and Implementation of the 5DCT Technique for Breathing-Gated Image Generation for Lung Cancer Treatment Planning." International Journal of Radiation Oncologyo Biologyo Physics 96(2): E687.

19 Niedzielski, J., M. Miften, B. Jones, K. Goodman and **D.H. Thomas** (2017). "Analysis of Acquisition Parameters and Pharmacokinetic Models From DCE-CT with Application to Outcome Assessment of Radiation Therapy: SU-K-601-15." Medical Physics 44(6).

20 Miller, B., T. Alexeev**, D.H Thomas**, K. Stuhr, B. Kavanagh, M. Miften and C. Altunbas (2018). CBCT-Based Dose Calculations with a Two-Dimensional Anti-Scatter Grid Prototype: The Effect of Scatter Suppression On Dose-Calculation Accuracy. MEDICAL PHYSICS, WILEY 111 RIVER ST, HOBOKEN 07030-5774, NJ USA.

21 Low, D., D. O'Connell, **D.H Thomas**, T. Dou, J. Lewis and P. Lee (2018). Is There a Better Way Than 4DCT to Characterize Breathing Motion MEDICAL PHYSICS, WILEY 111 RIVER ST, HOBOKEN 07030-5774, NJ USA.

22 Lee, P., M. Cao, J. Lamb, **D.H. Thomas**, A. Mikaeilian, M. Kamrava, J. Hernandez, N. Agazaryan, D. Low and M. Steinberg (2017). "Phase 1 Study of Stereotactic Body Radiation Therapy for Liver Tumors Utilizing an MRI-Guided Tri-Co Teletherapy System." International Journal of Radiation Oncologyo Biologyo Physics 99(2): E164-E165.

23 Lauria, M., D. O'Connell, N. Agazaryan, J. Lewis, J. Lamb, **D.H Thomas**, P. Lee and D. Low (2019). Clinical Introduction of 5DCT Simulation for Lung Cancer. MEDICAL PHYSICS, WILEY 111 RIVER ST, HOBOKEN 07030-5774, NJ USA.

24 Lamb, J., J. Ginn, D. O'Connell, **D.H Thomas**, N. Agazaryan, M. Cao, Y. Yang and D. Low (2016). "SUFJ151: Evaluation of a Magnetic Resonance Image Gated Radiotherapy System Using a Motion Phantom and Radiochromic Film." Medical physics 43(6Part11): 3442-3442.

25 Ginn, J. S., D. O'Connell, **D. H. Thomas**, D. A. Low and J. M. Lamb (2018). "Model-Interpolated Gating for Magnetic Resonance Image-Guided Radiation Therapy." International Journal of Radiation Oncology* Biology* Physics 102(4): 885-894.

26 Ginn, J., D. O'connell, **D. Thomas**, N. Agazaryan, M. Cao, Y. Yang, D. Low and J. Lamb (2017). "a Preliminary Evaluation of Respiratory Motion Modeling at 0.35 t for Mri-guided Radiotherapy: tu-fg-fs2-02." Medical Physics 44(6): 3155.

27 Forghani, F. and **D. Thomas** (2019). An Analysis of X-Ray Induced Acoustic Imaging and Its Accuracy for Absolute Dosimetry. MEDICAL PHYSICS,

28 Forghani, F., A. Mahl, B. Jones, M. Borden, M. Miften and **D. Thomas** (2020). "Analysis of experimental acoustic waves induced by high energy pulsed X-ray beams." Bulletin of the American Physical Society 65.

29 Faught, J., Y. Vinogradskiy, D. Thomas, M. Miften and D. Westerly (2017). "Investigation of VMAT QA Discrepancies Observed with a Deterministic Dose Calculation Algorithm and Commercial Diode Array: TH-AB-FS1-10." Medical Physics 44(6).

30 Campbell, W., **D. Thomas**, M. Miften and B. Jones (2017). "Masking for Gold: Automated Segmentation of Arbitrarily-Shaped Fiducial Markers in Cone-Beam CT Projections and Pseudo-4D Topograms: TU-H-CAMPUS-JT-03." Medical Physics 44(6): 3178-3179.

31 Yang Y, Cao M, Sheng K, **…,Thomas DH,** et al. Longitudinal diffusion MRI for treatment response assessment: Preliminary experience using an MRI-guided tri-cobalt 60 radiotherapy system. Medical physics. 2016;43(3):1369-1373.

32 Yang Y, Cao M, Kamrava M, …,**Thomas DH**, et al. WEFG20211: Longitudinal Diffusion MRI for Treatment Assessment of Sarcoma Patients with PreOperative Radiation Therapy. Medical physics. 2016;43(6):3829-3829.

33 Yang L, O'Connell D, Lee P,…, **Thomas DH,** et al. SUFJ135: Tumor DisplacementBased Binning for RespiratoryGated TimeIndependent 5DCT Treatment Planning. Medical physics. 2016;43(6):3438-3438.

34 **Thomas DH**, Kishan A, Santhanam A, et al. SUGBRA04: Simulation of Errors in Maximal Intensity Projection (MIP)Based Lung Tumor Internal Target Volumes (ITV) Using RealTime 2D MRI and Deformable Image Registration Based Lung Tumor Tracking. Medical physics. 2016;43(6):3635-3636.

35 Rwigema J, **Thomas DH**, Cao M, Yoshizaki T, Chen A. Intrafraction Organ Motion Tracking With Real-Time MRI-Guided Radiation Therapy for Head and Neck Cancer. International Journal of Radiation Oncologyo Biologyo Physics. 2016;94(4):878.

36 O'Connell D, Shaverdian N, Kishan A, **Thomas, DH** et al. Clinical Validation and Implementation of the 5DCT Technique for Breathing-Gated Image Generation for Lung Cancer Treatment Planning. International journal of radiation oncology, biology, physics. 2016;96(2S):E687.

37 O'Connell D, **Thomas DH**, Dou T, et al. SUD20206: Prospective FreeBreathing CT Scan Selection for 5DCT. Medical physics. 2016;43(6):3342-3342.

38 Nguyen D**, Thomas DH**, Cao M, O'Connor D, Lamb J, Sheng K. TH-AB-BRA-02: Automated Triplet Beam Orientation Optimization for MRI-Guided Co-60 Radiotherapy. Medical Physics. 2016;43(6):3853-3854.

39 Low D, **Thomas DH**, Dou T, Lee P, Lewis J, O'Connell D. PO-0880: Clinical implementation of 5DCT workflow. Radiotherapy and Oncology. 2016;119:S422.

40 Lamb J, Ginn J, O'Connell D, **DH Thomas** et al. SUFJ151: Evaluation of a Magnetic Resonance Image Gated Radiotherapy System Using a Motion Phantom and Radiochromic Film. Medical physics. 2016;43(6):3442-3442.

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