

# David Parsons, PhD, DABR

UT Southwestern Medical Center, 2280 Inwood Rd., Dallas, TX, 75390-9303

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## Employment

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### Assistant Professor

*University of Texas Southwestern Medical Center,*  
Associate Directory of the Medical Physics Residency  
Lead Physicist for the Ethos Adaptive Service  
Lead Physicist for the Breast Disease Oriented Team

**Dallas, TX**  
*July 2020–Present*

### Adjunct Professor

*Dalhousie University*

**Halifax, Nova Scotia**  
*October 2021–Present*

### Chief Medical Physics Resident

*University of Texas Southwestern Medical Center*

**Dallas, TX**  
*July 2019–June 2020*

### Medical Physics Resident

*University of Texas Southwestern Medical Center*

**Dallas, TX**  
*July 2017–June 2019*

### Medical Physics Assistantship

*Nova Scotia Health Authority*

**Halifax, Nova Scotia**  
*September 2012–December 2015*

### Teaching Assistantship

*Dalhousie University*

**Halifax, Nova Scotia**  
*September 2010–August 2012*

## Education

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### Doctor of Philosophy, Medical Physics

*Dalhousie University,*

*Thesis: Volume-of-interest imaging for image guided radiotherapy*

Supervisor: James Robar, PhD, FCCPM

**Halifax, Nova Scotia**  
*2012–2017*

### Master of Science, Physics

*Dalhousie University,*

*Thesis: The production and detection of optimized Low-Z linear accelerator target beams for image guidance in radiotherapy*

Supervisor: James Robar, PhD, FCCPM

**Halifax, Nova Scotia**  
*2010–2012*

## **Bachelor of Science with Honours in Physics**

Acadia University,

*Thesis: An investigation of the effects of Sn alloying additions in the Ni-Mn-Ga ferromagnetic shape memory alloy system*

Supervisor: Craig Bennett, PhD

**Wolfville, Nova Scotia**

2006–2010

## **Certification and Licensure**

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**American Board of Radiology**

**United States of America**

2021–Present

**Medical Physicist License, State of Texas**

FMP02000214

**Dallas, TX**

2017–Present

## **Clinical Trials**

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1. Principal investigator for *VisionRT-based Deep Inspiration Breath-hold (DIBH) Respiratory Motion Management Strategy, A Pilot Study for Thoracic and Abdominal Tumors Stereotactic Body Radiotherapy*, UT Southwestern Medical Center and Vision RT Inc.; \$154k, 2021-4
2. Co-investigator for *Vision RT Collision Camera Study*, UT Southwestern Medical Center and Vision RT Inc.; 2022-present

## **Grants, Awards and Scholarships**

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1. Basic Transitional Physics Award, *Dosimetric comparison of stereotactic accelerated partial breast irradiation modalities*, American Society for Radiation Oncology Annual Meeting 2023
2. Best of Professional, *Development of a milestones project for a medical physics residency program: initial experience with the assessment of clinical competency*, 65th Annual Meeting of the American Association of Physicists in Medicine, 2023
3. UT Southwestern Medical Physics Educator of the Year, 2022
4. Doctoral Research Award, Canadian Institutes of Health Research and Canadian Nuclear Safety Commission; \$105k, 2014-7
5. Izaak Walton Killam Award; Killam Trusts; \$75k, 2013-7
6. Postgraduate Scholarships Master's (PGS-M), Natural Sciences and Engineering Research Council of Canada; \$17.5k, 2011-2

## Book Chapters

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1. T. D. Chiu, **D. Parsons**, Z. Xiong, R. Reynolds and Y. Zhang, *3D Printed Phantoms in RT*, 3D Printing in Radiation Oncology, 1st Edition, 2024, 198-219

## Peer-Reviewed Articles

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\* denotes co-first authors

1. \*Y.S. Kwon, \***D. Parsons**, M. Arbab, N. Wandrey, P. Yarlagadda, S. Stojadinovic, W. Lu, P. Alluri, X. Li, T.D. Chiu, M. Lin, L. Chen, D. Kim, Y. Gonzalez, X. Gu, Y. Zhang, R. Timmerman, and A. Rahimi, *Assessment of cardiac radiation dose in the Co-60 prone based stereotactic partial breast irradiation (CP-sPBI) using distance metrics*, *Frontiers of Oncology*, submitted
2. Y. Gonzalez, L. Chen, J. Visak, H. Lee, N. Kim, M. Arbab, P. Alluri, Y. Zhang, T. Chiu, Z. Iqbal, T. Zhuang, B. Cai, H. Kim, A. Pompos, A. Godley, S. Jiang, R. Timmerman, M. Lin, A. Rahimi and **D. Parsons**, *A dosimetric comparison for adaptive cone-beam CT and MRI based radiotherapy for stereotactic partial breast irradiation*, *Practical Radiation Oncology*, submitted
3. M. Chen, T. D. Chiu, M. R. Folkert, R. Timmerman, X. Gu, W. Lu and **D. Parsons**, *Motion analysis comparing surface imaging and diaphragm tracking on kV projections for deep inspiration breath hold (DIBH)*, *Physica Medica*, accepted
4. Y. Gonzalez, J. Visak, C. Liao, A. Yen, T. Zhang, B. Cai, A. Godley, Y. Zhang, R. Timmerman, P. Iyengar, K. Westover, **D. Parsons** and M. Lin, *Beyond Conventional Bounds: Surpassing System Limits for Stereotactic Ablative (SAbR) Lung Radiotherapy using CBCT-based Adaptive Planning System*, *Practical Radiation Oncology*, in press
5. R. Li, T. Zhuang, S. Montalvo, K. Wang, **D. Parsons**, Y. Zhang, P. Iyengar, J. Wang, A. Godley, B. Cai, M. Lin and K. Westover, *Adapt-On-Demand: A Novel Strategy for Personalized Adaptive Radiotherapy for Locally Advance Lung Cancer*, *Practical Radiation Oncology*, in press
6. A. Maniscalco, E. Mathew, **D. Parsons**, A. Rahimi, M. Arbab, P. Alluri, X. Li, M. Lin, S. Jiang and D. Nguyen, *Deep learning guided radiation therapy modality selection via a multi-task dose prediction model*, *Medical Physics*, 51(6), 2024, 3932-49
7. M. Dohopolski, J. Visak, B. Choi, B. Meng, **D. Parsons**, X. Zhong, E. Inam, V. Avkshtol, D. Moon, D. Sher and M. Lin, *In silico evaluation and feasibility of near margin-less head and neck daily adaptive radiotherapy*, *Radiotherapy and Oncology*, 197, 2024, 110178
8. M. Arbab, R. Alluri, R. Frame, **D. Parsons**, M Lin, J. Cleaton, A. Rahimi, *Master breast radiation planning: Simple guide for radiation oncology residents*, *Advances in Radiation Oncology*, 9(6), 2024, 101476
9. T. Zhuang, **D. Parsons**, N. Desai, G. Gibbard, D. Keilty, M. Lin, B. Cai, D. Nguyen, T. Chiu, A. Godley, A. Pompos, S. Jiang, *Simulation and pre-planning omitted radiotherapy (SPORT): a feasibility study for prostate cancer*, *Biomedical Physics & Engineering Express*, 10(2), 2024, 025019
10. **D. Parsons**, T. Y. Lim, J. R. Teruel, S. Agostinelli, J. Liang, P. Mancosu, A. Cherpak, D. N. Stanley, K.H. Ahn, B. Guo, Y. Gonzalez, J. Burmeister, J. Y.C. Wong X. Gu and G. G.Y. Kim,

- Considerations for intensity modulated total body or total marrow and lymphoid irradiation*, Clinical and Translational Radiation Oncology, 43, 2023, 100674
11. J. Visak, E. Inam, B. Meng, S. Wang, **D. Parsons**, D. Nyugen, T. Zhang, D. Moon, V. Avkshtol, S. Jiang, D. Sher, and M. Lin, *Evaluating machine learning enhanced intelligent-optimization-engine (IOE) performance for ethos head-and-neck (HN) plan generation*, Journal of Applied Clinical Medical Physics, 24(7), 2023, e13950
  12. **D. Parsons**, M. Joo, Z. Iqbal, A. Godley, N. Kim, A. Spangler, K. Albuquerque, A. Sawant, B. Zhao, X. Gu and A. Rahimi, *Stability and reproducibility comparisons between deep inspiration breath-hold techniques for left-sided breast cancer patients*, Journal of Applied Clinical Medical Physics, 24(5), 2023, e13906
  13. C. Church, R.L. MacDonald, **D. Parsons** and A. Syme, *Evaluation of plan quality and treatment efficiency in cranial stereotactic radiosurgery treatment plans with a variable source-to-axis distance*, Medical Physics, 50(5), 2023, 3039-54
  14. C. Shen, L. Chen, X. Zhong, Y. Gonzalez, J. Visak, B. Meng, E. Inam, **D. Parsons**, A. Godley, S. Jiang, B. Cai and M. Lin, *Clinical Experience on Patient-Specific Quality Assurance for CBCT-based Online Adaptive Treatment Plan*, Journal of Applied Clinical Medical Physics, 24(4), 2023, e13918
  15. S. All, B. Zhao, S. Montalvo, C. Maxwell, C. Johns, X. Gu, A. Rahimi, P. Alluri, **D. Parsons**, T. Chiu, S. Schroeder and N. D. Kim, *Feasibility and Efficacy of Active Breathing Coordinator (ABC) Assisted Deep Inspiration Breath Hold (DIBH) Technique for Treatment of Locally Advanced Breast Cancer*, Journal of Applied Clinical Medical Physics, 24(2), 2023, e13893
  16. S. Montalvo, N. Kim, C. Nwachukwu, P. Alluri, **D. Parsons**, M. Lin, B. Cai, T. Zhuang, B. Hrycushko, L. Chen, R. Timmerman and A. Rahimi, *On the feasibility of improved target coverage without compromising organs at risk using online adaptive stereotactic partial breast irradiation (A-SPBI)*, Journal of Applied Clinical Medical Physics, 24(2), 2023
  17. Z. Xiong, Y. Zhong, T. I. Banks, R. Reynolds, T. Chiu, J. Tan, Y. Zhang, **D. Parsons**, Y. Yan, A. Godley and S. Stojadinovic, *Machine characterization and central axis depth dose data of a superficial x-ray radiotherapy unit*, Biomedical Physics & Engineering Express, 9(1), 2023, 015005
  18. C. Church, **D. Parsons** and A. Syme, *Region-of-interest intra-arc MV imaging to facilitate sub-mm positional accuracy with minimal imaging dose during treatment deliveries of small cranial lesions*, Journal of Applied Clinical Medical Physics, 23(11), 2022, e13769
  19. E. Hsu, **D. Parsons**, T.D. Chiu, A. Godley, D.J. Sher and D. Vo, *3D printed integrated bolus/headrest for radiation therapy for malignancies involving the posterior scalp and neck*, 3D Printing in Medicine, 8(1):22, 2022, 1-8
  20. E. Zhang-Velten, Y. Zhang, S. Radpour, X. Gu, N. Kim, P. Alluri, C. Nwachukwu, T. Chiu, W. Lu, **D. Parsons**, J. Tan, J. Gillespie, S. Stevenson, H. Choy, R. Timmerman and A. Rahimi, *A How-to compendium for Gammapod treatments, Clinical workflow, and Clinical Program at an early adapting Institution*, Practical Radiation Oncology, 12(3), 2022, e177-82
  21. E. Zhang-Velten\*, **D. Parsons\***, P. Lee, E. Chambers, R. Abdulrahman, N.B. Desai, T. Dan, Z. Wardak, R. Timmerman, M. Vusirikala, P. Patel, T. Simms-Waldrip, V. Aquino, A. Koh, J. Tan, Z. Iqbal, Y. Zhang, R. Reynolds, T. Chiu, M. Joo, B. Hrycushko, L. Ouyang, R. Lamphier, Y.

- Yan, S.B. Jiang, K.A. Kumar and X. Gu, *Volumetric modulated arc therapy based total body irradiation (VMAT-TBI): six-year clinical experience and treatment outcomes*, Transplantation and Cellular Therapy, 28(2), 2022, 113e1-8
22. C. Church, **D. Parsons** and A. Syme, *Investigating the Impacts of Intrafraction Motion on Dosimetric Outcomes When Treating Small Targets With Virtual Cones*, Journal of Applied Clinical Medical Physics, 22(8), 2021, 60-71
  23. T. Chiu, Z. Xiong, **D. Parsons**, M. R. Folkert, P. Medin and B. Hrycushko, *Low-cost 3D print-based phantom fabrication to facilitate interstitial prostate brachytherapy training program*, Brachytherapy, 19(6), 2020, 800-11
  24. **D. Parsons**, Y. Zhang, X. Gu and W. Lu, *POD-DOSI: A Dedicated Dosimetry System for GammaPod Commissioning and Quality Assurance*, Medical Physics, 47(8), 2020, 3647-57
  25. C. Ma, **D. Parsons**, M. Chen, S. Jiang, X. Gu, Q. Hou and W. Lu, *Electron modulated arc therapy (EMAT) using photon MLC: I. Dosimetric characteristics based on Monte Carlo simulations*, Physica Medica, 67(1), 2019, 1-8
  26. **D. Parsons**, C. Church and A. Syme, *Toward a pre-clinical irradiator using clinical infrastructure*, Physica Medica, 58(1), 2019, 21-31
  27. J. D. Lincoln, **D. Parsons**, S. E. Clarke, S. Cwajna and J. L. Robar, *Technical Note: Evaluation of kV CBCT enhancement using a liver specific contrast agent for stereotactic body radiation therapy image guidance*, Medical Physics, 46(3), 2019, 1175-81
  28. Y. Zhang, M. R. Folkert, B. Li, X. Huang, J. Meyer, T. Chiu, P. Lee, J. Tehrani, J. Cai, **D. Parsons**, X. Jia and J. Wang, *4D Liver Tumor Localization using Cone-Beam Projections and a Biomechanical Model*, Radiotherapy and Oncology, 133, 2019, 183-92
  29. C. Ma, M. Chen, T. Long, **D. Parsons**, X. Gu, S. Jiang, Q. Hou and W. Lu, *Flattening filter free in intensity modulated radiotherapy (IMRT) – theoretical modeling with delivery efficiency analysis*, Medical Physics, 46(1), 2018, 34-44
  30. T. D. Chiu\*, **D. Parsons\***, Y. Zhang, B. Hrycushko, B. Zhao, R. Chopra, N. Kim, A. Spangler, A. Rahimi, R. Timmerman, S. B. Jiang, W. Lu, and X. Gu, *Prototype volumetric ultrasound tomography image guidance system for prone stereotactic partial breast irradiation: Proof-of-concept*, Physics in Medicine and Biology, 63(5), 2018, 055004
  31. **D. Parsons**, M.T.R. Stevens and J. L. Robar, *Current modulated volume-of-interest imaging for kilovoltage intrafraction monitoring of the prostate*, Medical Physics, 44(4), 2017, 1479-93
  32. M.T.R. Stevens, **D. Parsons**, and J. L. Robar, *Patient specific methods for room-mounted x-ray imagers for monoscopic/stereoscopic prostate motion monitoring*, J Appl Clin Med Phys, 18(4), 2017, 40-50
  33. M.T.R. Stevens, **D. Parsons**, and J. L. Robar, *Continuous monitoring of prostate position using stereoscopic and monoscopic kV image guidance*, Medical Physics, 43(5), 2016, 2558-68
  34. **D. Parsons** and J. L. Robar, *Volume of interest CBCT and tube current modulation for image guidance using dynamic kV collimation*, Medical Physics, 43(4), 2016, 1808-17
  35. R. Berbeco, **D. Parsons**, M. Yewondwossen, A. Detappe, P. Tsiamas and J. L. Robar, *Low-Z target switching to increase tumor endothelial cell dose enhancement during gold nanoparticle-aided*

*radiation therapy*, Medical Physics, 43(1), 2016, 436-42

36. **D. Parsons** and J. L. Robar, *An investigation of kV CBCT image quality and dose reduction for volume-of-interest imaging using dynamic collimation*, Medical Physics, 42(9), 2015, 5258-69
37. **D. Parsons**, J. L. Robar and D. Sawkey, *A Monte Carlo investigation of Low-Z target image quality generated in a linear accelerator using Varian's VirtuaLinac*, Medical Physics, 41(2), 2014, 021719
38. **D. Parsons** and J. L. Robar, *The effect of copper conversion plates on Low-Z target image quality*, Medical Physics, 39(9), 2012. 5362-71
39. **D. Parsons** and J.L. Robar, *Beam generation and planar imaging at energies below 2.40 MeV with carbon and aluminum linear accelerator targets*, Medical Physics, 39(7), 2012, 4568-78
40. J. L. Robar, **D. Parsons**, A. Berman and A. MacDonald, *Volume-of-interest cone-beam CT using a 2.35 MV beam generated with a carbon target*, Medical Physics, 39(7), 2012, 4209-18

## Presentations and Posters

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### Invited Oral Presentations.....

1. **D. Parsons**, *Enhancing treatment planning efficiency and quality with SGRT*, 66th Annual Meeting of the American Association of Physicists in Medicine, July 2024, Los Angeles, CA
2. **D. Parsons**, *Surface guidance advancement: Novel usage of SGRT for CBCT-based adaptive radiation therapy*, 2024 European Annual SGRT Meeting, 2024, Phoenix, AZ
3. **D. Parsons**, *Improving efficiencies with MapRT*, 2023 European Annual SGRT Meeting, 2023, London, UK
4. **D. Parsons**, *SGRT in Treatment Planning: Surface Guided Clearance Mapping*, American Society for Radiation Oncology Annual Meeting 2023, October 2023, San Diego, CA
5. **D. Parsons**, *Promises & pitfalls Of automations in photon online adaptive therapy*, 65th Annual Meeting of the American Association of Physicists in Medicine, July 2023, Houston, TX
6. **D. Parsons**, *SGRT in Treatment Planning: Surface Guided Clearance Mapping*, 2023 US Annual SGRT Meeting: The Next Stop on Your SGRT Journey, May 2023, New York, NY
7. **D. Parsons**, *Enhancing Patient Experience: A Multi-Treatment Site Transition*, 2022 US Annual SGRT Meeting: Uncovering the Future of Motion Management, June 2022, Washington, DC
8. **D. Parsons**, C. Ding, B. Zhao, T. Chiu, L. Tirpak, R. Reynolds, Y. Park, Y. Yan, S. Jiang and X. Gu, *Improving Patient Safety: Building a Stringent Stereotactic Program*, QA Today, April 2021, Dallas, Tx
9. **D. Parsons**, C. Ding, B. Zhao, T. Chiu, L. Tirpak, R. Reynolds, Y. Park, Y. Yan, S. Jiang and X. Gu, *Film-less Stereotactic End-to-End Testing, including Non-coplanar Beams*, American Society for Radiation Oncology Annual Meeting 2019 - Sun Nuclear Sponsored Presentation, September 2019, Chicago, IL
10. **D. Parsons**, C. Ding, B. Zhao, T. Chiu, L. Tirpak, R. Reynolds, Y. Park, Y. Yan, S. Jiang and X. Gu, *Film-less Stereotactic End-to-End Testing, including Non-coplanar Beams*, 2019 AAPM Sun

Nuclear Lunch Symposium, July 2019, San Antonio, TX

11. **D. Parsons**, J.L. Robar and D. Sawkey, Monte Carlo investigation of Low-Z targets in a TrueBeam linear accelerator using Varian's Virtualinac, Varian Research Partnership Symposium, March 2013, Atlanta, GA

Other Oral Presentations.....

1. A. Maniscalco, E. Mathew, **D. Parsons**, A. Rahimi, M. Arbab, P. Alluri, X. Li, M. Lin, S. Jiang and D. Nguyen, *Radiotherapy modality comparison via multi-task deep learning dose prediction model*, 66th Annual Meeting of the American Association of Physicists in Medicine, July 2024, Los Angeles, CA
2. A. Rahimi, M. Leitch, B. Dogan, P. Alluri, D. Farr, M. Arbab, S. Seiler, D. N. Kim, R. Wooldridge, N. Unni, C. Nwachukwu, I. Patel, Y. Zhang, W. Lu, **D. Parsons**, A. Nguyen, T. D. Chiu, H. Morgan, H. McArthur, S. Sahoo, and R. Timmerman, *Interval between pre-operative single fraction stereotactic radiation and surgery greater than 6 months along with radiation dose strongly impacts pathological response in early breast cancer*, American Society for Radiation Oncology Annual Meeting 2023, October 2023, San Diego, CA
3. Y. Gonzalez, L. Chen, H. Lee, D. N. Kim, M. Arbab, P. Alluri, Y. Zhang, T. D. Chiu, Z. Iqbal, T. Zhuang, B. Cai, H. Kim, Y. K. Park, R. Timmerman, M. Lin, A. S. Rahimi, and **D. Parsons**, *Dosimetric comparison of stereotactic accelerated partial breast irradiation modalities*, American Society for Radiation Oncology Annual Meeting 2023, October 2022, San Diego, CA
4. R. Ravella, E. Zhang-Velten, **D. Parsons**, N. Desai, T. Dan, R. Timmerman, S. Jiang, X. Gu, and K. Kumar, *Volumetric Modulated Arc Therapy Enabled Total Body Irradiation (VMAT-TBI) vs. Conventional TBI (cTBI): A Comparison of Treatment Outcomes and Toxicities*, American Society for Radiation Oncology Annual Meeting 2022, October 2022, San Antonio, TX
5. C. Church, **D. Parsons** and A. Syme, *Sub-mm Positioning Accuracy Using MV Arc-based Imaging for Virtual Isocenter Treatments*, 65th Annual Meeting of the Canadian Organization of Medical Physicists and the Canadian College of Physicists in Medicine, September 2019, Kelowna, Canada
6. J. Tan, **D. Parsons**, P. Lee and X. Gu, *Auto-VMAT-TBI: An Automatic Treatment Planning Software Platform for Volumetric Modulated Arc Therapy-Enabled Total Body Irradiation*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX
7. W. Lu, M. Chen, N. Salehi, Y. Zhang, **D. Parsons**, S. Jiang and X. Gu, *Independent Dose Calculation for GammaPod Treatment*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX
8. T. Chiu, **D. Parsons**, F. Kalantari, S. Stojadinovic, *Motion Tracking Quality Assurance Platform for Leksell Gamma Knife HDMM System*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX
9. T. Chiu, H. Liu, M. Joo, **D. Parsons**, K. Kumar, T. Dan, S. Jiang and X. Gu, *Pediatric Radiation Oncology with Movie Induced Sedation Effect (PROMISE) Radiation Therapy*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX
10. Y. Zhang, W. Lu, N. Salehi, **D. Parsons**, R. Reynolds, S. Stojadinovic, S. Jiang and X. Gu, *Com-*

*missioning of a Noninvasive Breast Stereotactic Body Radiation Therapy Platform: GammaPod*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX

11. **D. Parsons**, T. Chiu, Y. Zhang, W. Lu, S. Jiang and X. Gu, *PodPhantom: A Robotic Prototype Dosimetric Data Collection System for GammaPod*, 61th Annual Meeting of the American Association of Physicists in Medicine, July 2019, San Antonio, TX
12. M.N. Ha, O. Piccolo, N. Melong, **D. Parsons**, A. Detappe, O. Tillement, R. I. Berbeco, J. N. Berman, J. L. Robar, *OC-0055 Zebrafish model to study the use of nanoparticles as a radiosensitizer in low Z target beams*, ESTRO 38, Radiotherapy and Oncology 133(S1), 2019, S20-1
13. **D. Parsons**, T. Chiu, R. Chopra, W. Lu, S. Jiang and X. Gu, *WE-AB-KDBRB1-3: Development of a Robotic Prototype Ultrasound Tomography System for Image Guided Prone Breast SBRT*, 60th Annual Meeting of the American Association of Physicists in Medicine, August 2018, Nashville, TN
14. C. Ma, **D. Parsons**, M. Chen, X. Gu and W. Lu, *TU-K-KDBRC-5: Modulated Electron Arc Therapy (MEAT) with 3D Bolus and Photon MLC for Chest Wall Radiotherapy*, 60th Annual Meeting of the American Association of Physicists in Medicine, August 2018, Nashville, TN
15. **D. Parsons**, M.T.R. Stevens and J. L. Robar, *TH-AB-205-4: Current modulated volume-of-interest imaging for kilovoltage intrafraction monitoring of the prostate*, 59th Annual Meeting of the American Association of Physicists in Medicine, August 2017, Denver, CO
16. M. Yewondwossen, **D. Parsons** and J.L. Robar, *WE-DE-BRA-08: A Linear Accelerator Target Allowing Rapid Switching Between Treatment and High-Contrast Imaging Modes*, 58th Annual Meeting of the American Association of Physicists in Medicine, July 2016, Washington, DC
17. **D. Parsons** and J.L. Robar, *X-ray tube current modulation with dynamic blade collimation for image quality improvement and dose reduction in CBCT guidance*, 35th Annual Congress of the European Society for Radiotherapy and Oncology, April 2016, Turin, Italy
18. **D. Parsons** and J.L. Robar, *TH-EF-BRB-05: Dynamic Blade Collimation for Image Quality Improvement and Dose Reduction in CBCT Guidance*, 57th Annual Meeting of the American Association of Physicists in Medicine, July 2015, Anaheim, CA
19. **D. Parsons** and J.L. Robar, *TH-A-18C-11: An investigation of KV CBCT image quality and dose reduction for volume-of-interest imaging using dynamic collimation*, 56th Annual Meeting of the American Association of Physicists in Medicine, July 2014, Austin, TX
20. C. Parsons, **D. Parsons**, J. L. Robar and R. Kelly, *TH-C-12A-10: Surface dose Enhancement using novel hybrid Electron and photon Low-Z therapy beams: Monte Carlo simulation*, 56th Annual Meeting of the American Association of Physicists in Medicine, July 2014, Austin, TX
21. **D. Parsons**, J. L. Robar and D. Sawkey, *WE-C-108-08: A Monte Carlo investigation of Low-Z target image quality generated in a linear accelerator using Varian's VirtualLinac*, 55th Annual Meeting of the American Association of Physicists in Medicine, August 2013, Indianapolis, IN
22. J.L. Robar, D. Leary and **D. Parsons**, *Novel approaches to volume of interest CBCT imaging using a 2.35 MV beam generated with a carbon target*, Varian Research Partnership Symposium, March 2013, Atlanta, GA



23. J.L. Robar, **D. Parsons** and A. Hupman, *TH-C-BRA-02: A novel technology for volume-of-interest kV cone-beam CT*, 54th Annual Meeting of the American Association of Physicists in Medicine, July 2012, Charlotte, NC
24. J.L. Robar, **D. Parsons**, D. Leary, A. Berman and A. Macdonald, *TU-E-BRA-11: Volume-of-interest CBCT with a Low-Z linear accelerator target: proof-of-concept*, 54th Annual Meeting of the American Association of Physicists in Medicine, July 2012, Charlotte, NC
25. **D. Parsons** and J.L. Robar, Sci—Thur PM: YIS — 08: The effect of copper conversion plates on Low-Z target image quality, 58th Annual Meeting of the Canadian Organization of Medical Physicists and the Canadian College of Physicists in Medicine (Young Investigators' Symposium), July 2012, Halifax, Canada
26. J.L. Robar, **D. Parsons**, A. Berman and A. MacDonald, Volume of interest cone-beam CT with a 2.35 MV beam generated with a carbon linear accelerator target, World Congress on Medical Physics and Biomedical Engineering, May 2012, Beijing, China
27. **D. Parsons** and J. L. Robar, Planar imaging at energies below 2.4 MV with carbon and aluminium linear accelerator targets, World Congress on Medical Physics and Biomedical Engineering, May 2012, Beijing, China

## Graduate Student Supervision:

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### **Cody Church, Doctor of Philosophy**

*Dalhousie University, Co-Supervisor,*

*2018–2022*

*Thesis: Techniques to Minimize the Dosimetric Impact of Intrafractional Motion with Improved Treatment Accuracy and Efficiency on a C-arm Medical Linear Accelerator*

### **Chaoqiong Ma, Doctor of Philosophy**

*UT Southwestern, Mentor,*

*2017–2018*

*Mentored Chaoqiong's project on modulated electron arc radiation therapy for chest wall and breast radiotherapy*

## Medical Physics Resident Supervision:

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Class of 2026.....

Jacob Buatti, PhD, Sruthi Sivabhaskar, PhD, Todd Soesbe, PhD and Shanshan Tang, PhD

Class of 2025.....

Brien Washington, PhD, Mary Gronberg, PhD, Xiao Liang, PhD and Ti Bai, PhD

Class of 2024.....

Siqiu Wang, PhD (UT Southwestern), Ronny Rahman, PhD (Westchester Medical Center), Sean Domal, PhD (UT Southwestern) and Ruiqi Li, PhD (UT Southwestern)

Class of 2023.....

Justin Visak, PhD (UT Southwestern), Chenyang Shen, PhD (UT Southwestern), Yesenia Gonzalez, PhD (UT Southwestern) and Boyu Meng, PhD (UC San Diego)

## Class of 2022.....

Liyuan Chen, PhD (UT Southwestern), Xinran Zhong, PhD (UT Southwestern), Samaneh Kazemifar, PhD (Texas Oncology) and Hugh Lee, PhD (Washington University)

## Class of 2021.....

Mindy Joo, PhD (Inova Fairfax Hospital), Rafe McBeth, PhD (University of Pennsylvania), Deepak Shrestha, PhD (Mayo Clinic Jacksonville) and Zhenyu Xiong, PhD (Rutgers University)

## Teaching Experience

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### At UT Southwestern:.....

**Co-Director of Surface Guidance Radiation Therapy Course** **January 2024–Present**  
*Physicians, Physicists, Dosimetrists and Therapists from around the world*

**Lecturer for Stereotactic Body Radiation Therapy Course** **January 2023–Present**  
*Physicians, Physicists, Dosimetrists and Therapists from around the world*

**Lecturer for Radition Therapy** **August 2021–Present**  
*Graduate students on the Medical Physics track*

**Lecturer for Radiation Production** **October 2021–Present**  
*Medical Residents*

### At Dalhousie University:.....

**Lecturer for Computational methods in medical physics:** **January–April 2018**  
*Taught several of sessions of MEDP/PHYC 6450 related to Monte Carlo in radiation therapy and corresponding labs*

## Committees

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### American Association of Physicists in Medicine.....

Task Group No. 379 - Technical Guidelines for Total Body Irradiation, Total Marrow Irradiation, and Total Lymphoid Irradiation

### UT Southwestern.....

Radiation Oncology Treatment Operations Committee

Adaptive Radiation Therapy Operations Committee

Medical Physics Residency Steering Committee

## Professional Activities

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### Memberships.....

The American Association of Physicists in Medicine, Member  
Canadian Organization of Medical Physicists, Member  
American Society for Radiation Oncology, Associate Member

### Academic Reviewing.....

Reviewer of scientific articles submitted to:

Medical Physics;  
Physics in Medicine and Biology;  
The Journal of Applied Clinical Medical Physics;  
Advances in Radiation Oncology;  
Medical Dosimetry;  
Current Medical Imaging Reviews