

CURRICULUM VITAE

Name: Hima Bindu Musunuru, MBBS, MRCP-UK, FRCR-UK

Certificate of Completion of Training (CCT) in Clinical Oncology (Radiation Oncology), UK: October 2013

Education: United Kingdom(UK)

2008-13	UK	Royal College of Radiology London, UK	FRCR-UK (Rad Onc); 2012
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Fellowship of the Royal College of Radiologists (UK)

FRCR Part 2

Part A	Single Best Answer questions extensively testing radiotherapy skills and systemic treatments in various cancer sites
Part B	Clinical and oral examinations testing interpretation of physical signs, diagnostic radiology, contouring radiotherapy target volumes, analyzing radical radiotherapy plans

Passed at first attempt (fewer than 50% of the candidates pass this exam at first attempt)

FRCR Part 1 Tests knowledge of basic sciences underpinning oncology –medical statistics, clinical pharmacology, cancer biology, radiobiology and radiation physics

All modules passed at first attempt (UK first time pass rate around 50%)

2005-08	UK	Royal Colleges of Physicians of the United Kingdom London, UK	MRCP-UK (Int Med); 2007
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1997-03	India	Siddhartha Medical College, NTR University of Health Sciences, Andhra Pradesh, India	MBBS; 2003
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Training:

Current:

Residency	PGY 2 University of Pittsburgh Medical Centre	Program Director Dr. Sushil Beriwal MD
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Fellowship	USA and Canada	Educational Supervisor
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Aug 16-Jun 19	Clinical Research Fellowship, Radiation Oncology University of Wisconsin, Madison	Dr. Paul Harari MD, FASTRO Dr. Michael Bassetti MD, PhD
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Nov 13-Jun 15	Fellowship, Radiation Oncology Prostate SABR and Brachytherapy University of Toronto, Toronto, Canada	Dr. D. A. Loblaw MD FRCR (Canada)
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Residency	Clinical Oncology-United Kingdom (UK)	Training Program Director
Oct 08-Oct 13	Residency, Clinical (Radiation) Oncology Humber and Yorkshire Deanery, Leeds, United Kingdom (UK) 2008-09 GI, GU and Head and Neck 2009-10 Breast, GU and GI 2010-11 Head and Neck, Breast, Lymphoma/Skin 2011-12 Breast, GU, Lung 2012-13 GYN, GU, GYN	Dr. R. A. Cooper, MD, FRCP, FRCR(UK)

United Kingdom (UK) has an unusual training in that as holders of MRCP, trainees have a broad based medical knowledge before entering specialist training. We therefore specialize in both radiation and systemic therapy and as such our training program is designated clinical oncology rather than radiation oncology

- St.James's University Hospital, Leeds is a 10 Elekta Linac cancer center and has 18 trainees in the program with an excellent reputation for training as evidenced by national surveys
- This teaching hospital is the sole provider for cancer services to 2.9 million population of the Yorkshire Cancer Network
- The radiotherapy department sees over 6000 new patients per year covering all tumour specific sites and acts as a tertiary referral center for brachytherapy, gamma knife, 4D CRT/IMRT/VMAT, and SABR
- The relationship with the University of Leeds and the Yorkshire Cancer Research Network permits involvement in research and development at all levels as well as undergraduate and postgraduate teaching

Following national curriculum set by Royal College of Radiologists, current training program extensively covers all cancer subsites and trainees' progress is assessed at annual appraisal. Trainees are only allowed to continue and progress pending satisfactory reports from educational supervisor, training program director and also fulfilling necessary work based assessments. Trainees apply for CCT after completing five years of dedicated oncology training and passing FRCR (UK).

National Societies:

- American Society for Radiation Oncology
- American Society of Clinical Oncology
- European Society for Radiotherapy and Oncology
- United Kingdom of Radiation Oncology
- Canadian Association of Radiation Oncology

Academic Honours & Achievements

1997-03	Academic prizes and distinctions in anatomy, Pathology, Ophthalmology, Obstetrics and Gynaecology
2002	Dr. P. Siva Reddy Endowment Medal in Ophthalmology
2012	Best oral presentation at the UK and Ireland Brachytherapy conference <i>Second cancers post I-125 Brachytherapy Monotherapy in Prostate Cancer</i>
2012	Young Scientist ESTRO session for the abstract: <i>Correlation between Dose Volume Parameters and Clinical Toxicity in Patients Treated with SABR for Stage 1 Lung Cancer</i>
2015	Frank Ellis RCR (UK) Medal for <i>Best Contribution to Clinical Oncology, 2014</i>

Training: United Kingdom (UK)

Internal Medicine

Aug 07-Aug 08	Residency, Internal Medicine Gastroenterology, Medical Oncology, Neurology Leeds General Infirmary, Leeds, UK	Dr. C. Donnellan, MD, FRCP
Aug 06-Aug 07	Residency, Internal Medicine GU, Geriatric Medicine, Respiratory Medicine Leeds General Infirmary, Leeds, UK	Dr. S. B. Pearson, MD, FRCP
Feb 06-Aug 06	Residency, Renal Medicine St. James's University Hospital, Leeds, UK	Dr. R. Baker, MD, FRCP
Aug 05-Feb 06	Residency, Cardiology Huddersfield General Infirmary, Huddersfield, UK	Dr. C. Walsh, MD, FRCP
Feb 05-Aug 05	Residency, Geriatric Medicine St. James's University Hospital, Leeds, UK	Dr. K. Rosenberg, MD, FRCP
Jan 05-Feb 05	Residency, Renal Medicine St. James's University Hospital, Leeds, UK	Dr. R. Baker, MD, FRCP
June 02- Aug 03	Rotating Internship Siddhartha Medical College & Hospital, India	Dr. R. Sasank, MD

Research Funding:

June 2014 - 2021 Aug Co-Primary Investigator	Stereotactic Pelvic Radiotherapy with HDR Boost for Dose Escalation in High Risk Prostate Cancer (SPARE)
	Principal Investigators Dr. Andrew Loblaw, Dr. H Musunuru
	Funding source Movember Discover Grants, Prostate Cancer, Canada
	Total Funding 159,650 CAD
	Funding Competitive Yes
2014 May - 2020 Aug Co-Investigator	Prostate Specific Quality of Life and Health Preference Values of patients undergoing a Two Treatment SBRT Program for Localized Prostate Cancer (2 STAR)
	Principal investigator Dr. Andrew Loblaw
	Funding source AbbVie-ACURA
	Total funding 30,000 CAD
	Funding Competitive Yes
2014 May - 2020 Aug Co-Investigator	Prostate Specific Quality of Life and Health Preference Values of patients undergoing a Two Treatment SBRT Program for Localized prostate Cancer (2 STAR)
	Principal investigator Dr. Andrew Loblaw
	Funding source Ride For Dad, Hunoria
	Total funding 19,943.27 CAD
	Funding Competitive Yes

Peer Reviewed Publications:

- 1.Musunuru HB**, Klotz L, Vesprini D, Morton G, Cheung P, Chung H, Sethukavalan P, Ghanem G, Zhang L, Mamedov A, Jethava V, D'Alimonte L, Deabreu A, Jain S, Yamamoto T, Loblaw A. Active Surveillance in intermediate-risk patients: Survival outcomes in the Sunnybrook Experience- *Journal of Urology*, 2016 Dec; 196(6): 1651-1658.
- 2.Musunuru HB**, Davidson M, Cheung P, Vesprini D, Liu S, Chung H, Chu W, Mamedov A, Ravi A, D'Alimonte L, Comisso K, Helou J, Deabreu A, Zhang L, Loblaw A. Predictive Parameters of Symptomatic Hematochezia Following 5-Fraction Gantry-Based SABR in Prostate Cancer. *Int J Radiat Oncol Biol Phys*. 2016 Apr 1; 94(5):1043-51.
- 3.Musunuru HB**, Quon H, Davidson M, Cheung P, Zhang L, D'Alimonte L, Deabreu A, Mamedov A, Loblaw A. Dose-escalation of five-fraction SABR in prostate cancer: Toxicity comparison of two prospective trials. *Radiother Oncol*. 2016 Jan; 118(1):112-7.
- 4.Musunuru HB**, Klotz L, Vesprini D, Morton G, Cheung P, Chung H, Sethukavalan P, Ghanem G, Zhang L, Mamedov A, Jethava V, D'Alimonte L, Deabreu A, Jain S, Yamamoto T, Loblaw A. Comparison of Contemporary Treatment Options for Early Prostate Cancer: A Single Institution Series- *Austin Journal of Radiation Oncology and Cancer*, 2016.
- 5. Musunuru HB**, Loblaw A. Clinical trials of stereotactic ablative radiotherapy for prostate cancer: updates and future direction. *Future Oncol*. 2015; 11(5):819-31.
- 6.Musunuru HB**, Cheung P, Loblaw A. Evolution of hypo fractionated accelerated radiotherapy for prostate cancer - The Sunnybrook experience. *Front Oncol*. 2014 Nov 14; 4:313.
- 7.Musunuru H**, Mason M, Murray L: Second primary cancers occurring after I-125 brachytherapy as monotherapy for early prostate cancer: *Clin Oncol (R Coll Radiol)*. 2014 Apr; 26(4):210-5.
- 8.Quon HC, Musunuru HB**, Cheung P, Pang G, Mamedov A, D'Alemonte L, Deabreu A, Zhang L, Loblaw A. Dose Escalated Stereotactic Body Radiation Therapy for Prostate Cancer: Quality of Life Comparison of Two Prospective Clinical Trials. *Front Oncology*, 2016 Aug 29; 6:185.
- 9.Yamamoto T, Musunuru B**, Vesprini D, Zhang L, Ghanem G, Loblaw A, Klotz L. Metastatic Prostate Cancer in Men Initially Treated with Active Surveillance. *J Urol*. 2016 May; 195(5):1409-14.
- 10.Choong ES, Bownes P, Musunuru HB**, Rodda S, Richardson C, Al-Qaisieh B, Swift S, Orton J, Cooper R. Hybrid (CT/MRI based) vs. MRI only based image-guided brachytherapy in cervical cancer: Dosimetry comparisons and clinical outcome. *Brachytherapy*. 2016 Jan-Feb; 15(1):40-8.
- 11. Helou J, Torres S, Musunuru HB**, Raphael J, Cheung P, Vesprini D, Chung HT, D'Alimonte L, Krahn M, Morton G, Loblaw A. Stereotactic Body Radiotherapy versus Low Dose Rate Brachytherapy for Localised Prostate Cancer: A Cost-Utility Analysis. *Clin Oncol (R Coll Radiol)*. 2017 Sep 12. [Epub ahead of print]
- 12.Murray L, Karakaya E, Hinsley S, Naisbitt M, Lilley J, Snee M, Clarke K, Musunuru HB**, Ramasamy S, Turner R, Franks K. Lung stereotactic ablative radiotherapy (SABR): dosimetric considerations for chest wall toxicity. *Br J Radiol*. 2016; 89(1058):20150628.
- 13.Murray L, Ramasamy S, Lilley J, Snee M, Clarke K, Musunuru HB**, Needham A, Turner R, Sangha V, Flatley M, Franks K. Stereotactic Ablative Radiotherapy (SABR) in Patients with Medically Inoperable Peripheral Early Stage Lung Cancer: Outcomes for the First UK SABR Cohort. *Clin Oncol (R Coll Radiol)*. 2016 Jan; 28(1):4-12.
- 14.Henry AM, Rodda SL, Mason M, Musunuru H**, Al-Qaisieh B, Bownes P, Smith J, Franks K, Carey B, Bottomley D. The Effect of Dose and Quality Assurance in Early Prostate Cancer Treated with Low Dose Rate Brachytherapy as Monotherapy. *Clin Oncol (R Coll Radiol)*. 2015 Jul; 27(7):382-6.

15. Nicolae A, Davidson M, Easton H, Helou J, **Musunuru H**, Loblaw A, Ravi A. Clinical evaluation of an endorectal immobilization system for use in prostate hypo fractionated Stereotactic Ablative Body Radiotherapy (SABR). *Radiat Oncol*. 2015 May 30; 10:122.
16. Cooper R, Brearley E, Hurmuz P, **Musunuru HB**, Richardson C, Swift S, Orton J, Bownes P: Assessment of uterus position as a surrogate for high-risk clinical target volume with respect to the applicator position for multiple fractions of brachytherapy in cervical cancer: *Arch Gynecol Obstet*. 2014 Dec; 290(6):1201-5.
17. Helou J, Morton G, Zhang L, Deabreu A, D'Alimonte L, Elias E, **Musunuru HB**, Mamedov A, Ravi A, Chung H, Cheung P, Loblaw A. A comparative study of quality of life in patients with localized prostate cancer treated at a single institution: stereotactic ablative radiotherapy or external beam+high dose rate brachytherapy boost. *Radiother Oncol*. 2014 Dec; 113(3):404-9.
18. Alayed Y, Cheung P, Pang G, Mamedov A, D'Alimonte L, Deabreu A, Commisso K, Commisso A, Zhang L, Quon HC, **Musunuru HB**, Helou J, Loblaw DA. Dose escalation for prostate stereotactic ablative radiotherapy (SABR): Late outcomes from two prospective clinical trials. *Radiother Oncol*. 2018 May;127(2):213-218.
19. **HB Musunuru**, M Davidson, L D'Alimonte, L Ho, P Cheung, D Vesprini, S Liu, W Chu, H Chung, A Ravi, A Deabreu, Z Bhounr, L Zhang, K Commisso, DA Loblaw. Phase I/II Study of Stereotactic Ablative Radiotherapy Including Regional Lymph Node Irradiation for Patients with High-Risk Prostate Cancer (SATURN): Acute Toxicity and Quality of Life Results. *Int. Journal of Radiation Oncology, Biology, Physics*. 2018 Jul S0360-3016(18)33462-X. [Epub ahead of print]
21. Witt JS, **Musunuru HB**, Bayliss RA, Howard SP. Large volume re-irradiation for recurrent meningioma with pulsed reduced dose rate radiotherapy. *J Neurooncol*. 2018 Nov 3. [Epub ahead of print]
22. Alayed Y, Cheung P, Vesprini D, Liu S, Chu W, Chung H, **Musunuru HB**, Davidson M, Ravi A, D'Alimonte L, Ho L, Deabreu A, Bhounr Z, Zhang L, Commisso K, Loblaw DA. SABR in high risk prostate cancer: outcomes from two prospective clinical trials with and without elective nodal irradiation. *Int J Radiat Oncol Biol Phys*. 2018 Nov S0360-3016(18)33997-X. [Epub ahead of print]
23. Dilshad Nathoo, Andrew Loblaw, Melanie Davidson, **Hima Bindu Musunuru**, Amir Khojaste, Ananth Ravi. The role of ultrasound imaging of bladder volume as a method to improve patient setup accuracy and reproducibility for prostate stereotactic ablative radiotherapy. *Journal of Medical Imaging and Radiation Sciences*. In Press.
24. Nikhil Sebastian, Trudy Wu, Erin Driscoll, Henning Willers, Suzanne Kelly, **Hima Bindu Musunuru** et al. Pre-Treatment Serum Bicarbonate Predicts for Primary Tumor Control after Stereotactic Body Radiation Therapy in Patients with Localized Non-Small Cell Lung Cancer. *Radiotherapy and Oncology*. In Press

Book Chapters:

EAU-ICUD Guidelines: Medical Management of Urological Malignancies
Overview of Clinical Trials **HB Musunuru**, DA Loblaw

Presentations and Posters:

2017

ASTRO

Musunuru HB, Rosenberg S, Mittauer K et al.

Differential Response of Gastrointestinal Tumors During Real-time MRI-Guided Radiotherapy

Digital Poster Discussion

Musunuru HB, Yadav P, Ko H et al.

Can Elective Neck Radiation Treatment Volumes be Safely Reduced to Diminish Toxicity Profiles for Oropharynx Cancer Patients?

D.Francis, **HB Musunuru**, P Yadav et al.

Do We Need to Dose-Escalate Fractionated Stereotactic Radiation Therapy for Resected Brain Metastases?

D. A. Loblaw, P. Cheung, G. Pang, H. C. Quon, **H. B. Musunuru**, and J. Helou.

Dose Escalation For prostate SABR: Late Outcomes from Two Prospective Clinical Trials

G. Bauman, J. Chen, G. Rodrigues, K. Commisso, A. Mamedov, **H. B. Musunuru**, M. Davidson, A. Warner, A. Loblaw

Extreme Hypofractionation for High Risk Prostate Cancer: Dosimetric Correlations with Rectal Bleeding

ESTRO

Musunuru HB, Rosenberg S, Mittauer K et al.

Rapid Early Response of Gastroesophageal Junction Tumors During Real-time MRI-Guided Radiotherapy

Poster Discussion

GU ASCO

Musunuru HB, Deabreu A, Davidson M et al.

Pelvic SABR with HDR Boost in Intermediate and High Risk Prostate Cancer (SPARE): Favorable Early Toxicity and Quality of Life Outcomes

2016

ASTRO

J Helou, S Torres, **HB Musunuru** et al.

Low dose rate brachytherapy vs standard external beam radiotherapy vs. SABR for low-risk prostate cancer: A cost-utility analysis

2015

ASTRO and CARO

HB Musunuru, Davidson M, Loblaw et al.

Phase I/II Study of Stereotactic Ablative Radiotherapy Including Regional Lymph Node Irradiation for patients with high-risk prostate cancer (SATURN)

HB Musunuru, Davidson M, Loblaw et al.

Predictive parameters of symptomatic Haematochezia following 5-fraction Gantry-Based SABR in prostate cancer

Oral Presentation at CARO

CARO

HB Musunuru, L klotz, DA Loblaw et al.

Active surveillance in intermediate-risk prostate cancer: Survival outcomes in the Sunnybrook experience

2014

ASTRO

HB Musunuru, P Sethukavalan, A Loblaw et al.

Comparison of Active Surveillance, Low Dose Rate Brachytherapy, Stereotactic Ablative Body Radiotherapy and Standard External Beam in Low Risk Prostate Cancer

- S. L. Rodda, M. Mason, **H. Musunuru**, A. Henry et al. Ten Year Outcomes In Men Under 60 Treated With Iodine -125 Permanent Brachytherapy As Monotherapy
- CARO**
HB Musunuru, P Sethukavalan, A Loblaw et al. Comparison of Active Surveillance, Low Dose Rate Brachytherapy, Stereotactic Ablative Body Radiotherapy and Standard External Beam in Low Risk Prostate Cancer
- ESTRO**
H Musunuru, Junni P, Lilley J et al. Effect of duodenal overlap with PTV (DUO OLV) on radiotherapy planning in patients with locally advanced pancreatic cancer
- E.S. Choong, S. Rodda, **H. Musunuru** et al. Brachytherapy in cervical cancer-Comparison between CT/MRI based versus MRI only based conformal approach
- E Choong, S Rodda, **H Musunuru** et al. Outcomes in locally advanced cervical cancer (LACC) patients treated radically with/without staging FDG- PET/CT
- S Rodda, E Choong, **H Musunuru** et al. Relapse patterns in node positive cervical cancer patients treated with modern radiotherapy techniques
- 2013**
BTS (British Thoracic Society)
S Ramamasy, **HB Musunuru**, K Franks et al. Lung SABR for medically inoperable peripheral stage 1 non-small cell lung cancer - Analysis of 305 patients
- Also presented at NCRI, Liverpool, UK*
- 2012**
ASTRO
HB Musunuru, M Mason, A Henry et al. Second Primary cancers occurring after I125 Brachytherapy as mono therapy for Early Prostate Cancer
- ESTRO**
HB Musunuru, S Ramasamy, K Clarke, et al. Correlation between dose volume parameters and clinical toxicity in patients treated with SABR for stage 1 lung cancer
- Prostate Brachytherapy UK and Ireland Conference**
HB Musunuru, M Mason, A Henry et al. The risk of second cancers occurring more than 5 years after I 125 monotherapy for early prostate cancer
- NCRI, Liverpool, UK*
E Choong, A Keding, **B Musunuru** et al. Life after Surgery and Radiotherapy for Breast Cancer: What do our patients have to say?
- 2011**
ESMO GI Cancer

HB Musunuru, R Roy, A Dhadda et al.

Positive benefit of adjuvant chemotherapy on outcome in pT3/4 or N+ rectal cancer following pre- operative chemo radiotherapy

ESTRO

HB Musunuru, D Bottomley, K Franks et al.

Acute toxicity of forward Planned Simultaneous Integrated Boost (SIB) IMRT in the first 105 patients with prostate cancer treated to a dose of 76Gy in 37 fractions