

ViewRay MRIdian Bibliography

FDA-cleared since 2012, ViewRay's MRIdian® is actively being used to treat cancer patients at leading cancer centers world-wide. This bibliography has been prepared by ViewRay to highlight the capabilities of ViewRay's innovative MRIdian radiation therapy technology.

In this bibliography we list peer-reviewed publications and conference proceedings that have been published by members of the radiation oncology care teams who have pioneered the use of MR image guidance in Radiation Therapy using ViewRay's MRIdian technology.

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MRIdian Clinical Studies

Acharya, S., Fischer-Valuck, B. W., Kashani, R., Parikh, P., Yang, D., Zhao, T., Olsen, J. (2016). Online Magnetic Resonance Image Guided Adaptive Radiation Therapy: First Clinical Applications. *International Journal of Radiation Oncology*Biology*Physics*, 94(2), 394-403.

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MRIdian Advanced MRI Studies

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- Wee CW, et al. Variability of gross tumor volume delineation for stereotactic body radiotherapy of the lung with tri-(60)co magnetic resonance image-guided radiotherapy system (viewray): A comparative study with magnetic resonance- and computed tomography-based target delineation. *Technol Cancer Res Treat* 2018;17:1533033818787383.
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MRIdian Quality Assurance

Andreozzi, J.M., Mooney, K. E., Bruza, P., Curcuru, A., Gladstone, D. J., Pogue, B. W., Green, O. Remote cherenkov imaging based quality assurance of a magnetic resonance image guided radiotherapy system. *Med Phys* 2018 (in press online).

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Mein S, et al. Development of a 3d remote dosimetry protocol compatible with mrgimrt. *Med Phys* 2017;44:6018-6028.

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CONFERENCE PROCEEDINGS FEATURING MRIDIAN

AAPM 2018 CONFERENCE PAPERS

[MO-C930-GePD-F4-1](#): K Singhrao, S Park, T Wong, Y Gao, M Guo, J Fu, P Hu, Y Yang, A Chang, J Lewis. An Image Processing Technique for Identification of Interstitial Catheters in High- and Low-Field MR-Guided HDR Brachytherapy (UCLA)

[MO-E115-GePD-F4-2](#): M Malin, E Lobb, M Stevens, G Redler, K Yenice, B Aydogan. Feasibility of Online SRS with MRIdian: Dosimetric Comparison of MRIdian to TrueBeam with HDMLC (U Chicago)

[MO-E115-GePD-F8-3](#): H Gach. Implantable Pulse Generator Radiofrequency Safety Considerations for Low Field MRI-Guided Radiotherapy (Wash U)

[MO-I345-GePD-F5-3](#): Allan Thomas, Austen Curcuru, Olga Green, Parag Parikh. What Predicts Target Coverage in MR-Guided Adaptive Radiation Therapy of the Pancreas? It Is Not OAR Nearest Distance. (Wash U)

[MO-I345-GePD-F5-3](#): P Parikh, G Hugo, B Teo, D Yan. Multi-Modality ART (Protons, MRI, PET). (Wash U)

[MO-J430-CAMPUS-F3-2](#): A Price, A Curcuru, F Reynoso, J Cammin, S Mutic, O Green. Commissioning a Monte Carlo Dose Calculation Algorithm in Heterogeneous Media for a Magnetic Resonance Image Guided Linear Accelerator (Wash U)

[MO-K-205-0](#): A Panda, R Stafford, A Doemer. MR Safety - Hybrid Environment. (Henry Ford)

[SU-F-DBRB-2](#): G Simpson, B Farnia, L Portelance, J Ford, N Dogan, F Yang. Predictive Value of 0.35T MRI Delta-Radiomics Features in Image-Guided Pancreatic SBRT. (U Miami)

[SU-F-KDBRA2-2](#): D Du, J Kim, C Glide-Hurst, A Doemer, N Wen, B Movsas, J Dragovic, I Chetty. Commissioning and Validation of Patient-Specific Quality Assurance On An MR-Linac. (Henry Ford)

[SU-F-KDBRA2-4](#): A Doemer, C Glide-Hurst, J Kim, N Wen, B Movsas, I Chetty. Geometric and Radiation Characterization of a New Double Stack Multileaf Collimator in a Low Field MR-Linac (Henry Ford)

[SU-F-KDBRA2-6](#): O Green, B Cai, J Cammin, A Price, S Mutic, S Goddu. Radiation Map and Effective Tenth Value Layer Measurements of An MR-Guided Jawless Ring-Gantry Linear Accelerator (Wash U)

[SU-I-GPD-I-25](#): G Simpson, D Asher, J Ford, L Portelance, F Yang, N Dogan. Diagnostic Value of 0.35T MR Radiomic Features in Recognition of Tumor Origin in Liver Cancer (U Miami)

[SU-I-GPD-J-47](#): J Kuwahara*, T Sakasai, H Okamoto, Y Miura, S Nishioka, Y Abe, J Itami. Assessment of Treatment Efficiency and Intra-Fractional Tumor Movements Using Real-Time Cine-MR in MR-IGRT System. (NCCH Tokyo)

[SU-I-GPD-T-202](#): B Maraghechi, H Gach, D Yang, H Li. Three-Dimensional Polymer Gel Dosimetry Using An Onboard 0.35 T Magnetic Resonance Imaging Scanner (Wash U)

[SU-K-202-3](#): S Jupitz, A Shepard, P Hill, B Bednarz. Correlation Between Tumor and Vessel Motion in the Liver (U Wisconsin)

[SU-K-KDBRB1-1](#): S P. Nejad-Davarani, J Cunningham, C Glide-Hurst. Novel Phantom Validation of Susceptibility-Related Distortions. (Henry Ford)

[SU-L-KDBRB1-2](#): T Mazur, A Curcuru, O Green, S Mutic, P Parikh, L Santanam. Qualitative Evaluation of Gating Sensitivity to Latency and Temporal Resolution in MRI-Guided RT (Wash U)

[SU-L-KDBRB1-3](#): D Tewatia, P Yadav, I Tanumihardjo, A Hallil, B Paliwal. Feasibility of MOSFET Real-Time In-Vivo Dosimetry for MRI-Linac Beams Under 0.34 T Magnetic Field. (U Wisconsin)

[SU-L-KDBRB1-4](#): J Cunningham, E Barberi, K Penev, J Miller, C Glide-Hurst. Evaluation of a Novel Pelvic End-To-End (PETE) Phantom in MR-Only and MR-IGRT Workflows (Henry Ford)

[SU-L-KDBRB1-5](#): A Steinmann, P Alvarez, H Lee, Z Wen, G Sawakuchi, L Court, R Stafford, C Fuller, D Followill . Design and Implementation of a Head and Neck Anthropomorphic Phantom Used in MRI Guided Radiotherapy Systems. (UT MD Anderson)

[SU-L-KDBRB1-6](#): Y Yang, Y Gao, F Han, P Lee, S Rashid, J Lamb, M Cao, D Low, P Hu. MRI Guided Radiotherapy of Centrally Located Thoracic Tumors: Effect of Cardiac Motion (UCLA)

[SU-L-KDBRB1-7](#): I Khaferllari, J Kim, I Chetty, C Liu, D Du, A Doemer, C Glide-Hurst, B Movsas, J Dragovic, N Wen . Investigating the Clinical Utility of Gafchromic EBT3 Film Dosimetry in An MR-Guided Linac. (Henry Ford)

[TH-AB-KDBRA1-8](#): B Cai, J Cammin, A Price, D Yang, J Park, V Rodriguez, S Mutic, O Green. Performance of a Doubly-Focused Double-Stack Multi-Leaf Collimator (MLC) System On a MR Guided Linear Accelerator. (Wash U)

[TH-E-KDBRA2-0](#): O Craciunescu, J Cai, C Glide-Hurst, Y Yang. Technical and Professional Preparations for Medical Physicists in the Upcoming MRgRT Era. (Henry Ford/UCLA)

[TH-E-KDBRA2-3](#): C Glide-Hurst. Working On MRI Guided Machines (MRI-Linac/Co60) for Medical Physicists Who Are Not Trained in MRI. (Henry Ford)

[TH-EF-KDBRB1-6](#): J Fu, A Santhanam, M Cao, M Guo, K Singhrao, V Yu, D Ruan, D Low, J Lewis. Abdominal Synthetic CT Generation for MR-Only Liver Radiotherapy Using Conditional Generative Adversarial Network. (UCLA)

[TU-B-KDBRB1-0](#): C Glide-Hurst, E Paulson, K Sheng. Advanced MRI: Novel Applications for Radiation Oncology. (Henry Ford/UCLA)

[TU-B-KDBRB1-1](#): C Glide-Hurst. Strategically Acquired On-Board MRI for ART. (Henry Ford)

[TU-C1000-GePD-F2-1](#): J Cunningham, D Du, C Glide-Hurst. Impact of Abdominal Compression On MR-Guided Radiation Therapy. (Henry Ford)

[TU-C1000-GePD-F2-2](#): L Rakotondravohitra, D Du, J Kim, J Cunningham, I Chetty, C Glide-Hurst. Validation of the Electron Return Effect in a Low-Field MR-Linac Using a Novel Phantom. (Henry Ford)

[TU-C1000-GePD-F2-3](#): A Steinmann, D O'Brien, K Mittauer, J Bayouth, G Sawakuchi, Z Wen, L Court, R Stafford, C Fuller, D Followill. Characterization and Validation of TLD and EBT3 Film in MR/CT Visible Phantoms Under the Presence of 0T, 0.35T and 1.5T (MD Anderson/U Wisconsin)

[TU-C1000-GePD-F2-4](#): S P. Nejad-Davarani, E Barberi, M Cole, C Glide-Hurst. Assessment of Gradient Nonlinearity Distortions in a Low-Field MR-Linac Using a Modular Large Field of View Phantom. (Henry Ford)

[TU-C1000-GePD-F2-5](#): S P. Nejad-Davarani, E Barberi, M Cole, C Glide-Hurst. Development of 3D Printed Immobilization for the MR-Linac: Toward High Precision Brain Treatments. (Henry Ford)

[TU-C930-GePD-F8-1](#): M Kim, J Park, C Choi, J Yoon, H An, J Kim. A Modification Method of Signal Intensity for Fabricating a Multi-Modality Phantom in MR Image-Guided Therapy: Using a Silicone Oil. (Seoul NUH)

[TU-E115-GePD-F2-3](#): J Kim, E Barberi, I Chetty, B Movsas, C Glide-Hurst. Gating Evaluation of An MRgRT System Using a Novel MR-Compatible Motion Phantom. (Henry Ford)

[TU-I345-GePD-F2-3](#): A Antolak, B Paliwal, E Jackson, R Mallozzi, P Yadav. Evaluation of a Novel 3D Distortion and Quality Control Phantom for MR-Guided Radiation Therapy. (U Wisconsin)

[TU-I345-GePD-F5-3](#): E Omari, G Hugo, O Green, S Mutic, H Gach, N Knutson, F Reynoso. Immobilization and Geometric Distortion Study for Magnetic Resonance Imaging Guided Stereotactic Radiosurgery On the ViewRay MR-Linac.

[TU-I345-GePD-F7-1](#): H An, J Kim, C Choi, S Kang, J Cho, S Lee, M Kim, J Park. Evaluation On the Out-Of-Field Irradiation by Magnetic Field During MR Image-Guided Radiation Therapy: A Phantom Study. (Seoul NUH)

[TU-I345-GePD-F7-2](#): M Stevens, M Malin, G Redler, B Aydogan. Feasibility of Spine SBRT Planning Using the ViewRay MR-Linac Treatment Planning System. (U Chicago)

[TU-I345-GePD-F7-4](#): J Cammin, A Price, B Cai, S Mutic, O Green. Surface Dose Measurements in An MR Image-Guided Radiation Therapy System Using OSLDs: Comparison with and Without a Static 0.35 T Magnetic Field. (Wash U)

[TU-J430-CAMPUS-F3-4](#): M Qi, L Zhou, Y Li, T Song. Monte Carlo Simulation Based Dose Calculation in Magnetic Field. (SMU Guangzhou)

[TU-K-207-8](#): P Bruza1, J Andreozzi, O Green, J Cammin, D Gladstone, B Pogue. Towards Time Resolved 3D Dosimetry in MRI-Linacs: Scintillation Images Surrogate Dose Distribution with High Accuracy. (Wash U)

[WE-AB-202-3](#): Y Fu1, T Mazur, S Liu, X Chang, Y Lu, H Li, P Parikh, D Yang. Automatic Segmentation of Multiple Organs From ViewRay MR Images Using Deep Densely Connected CNN for MRI Guided Adaptive Radiotherapy. (Wash U)

[WE-AB-KDBRC-9](#): Y Gao, C Gu, J Kim, M Cao, J Fu, A Kalbasi, D Ruan, J Lewis, D Low, P Hu, Y Yang. Treatment Response Prediction Using Texture Features From Longitudinal Diffusion MRI in Sarcoma Patients. (UCLA)

[WE-C1000-GePD-F2-1](#): Y Gao, C Gu, J Kim, M Cao, J Fu, A Kalbasi, D Ruan, J Lewis, D Low, P Hu, Y Yang. Accuracy of Multi-Modality Deformable Image Registration with MR and CT in MR-IGRT System. (UCLA)

[WE-FG-KDBRA1-2](#): J Andreozzi, P Bruza, J Cammin, D Gladstone, B Pogue, O Green2. Accuracy of Real-Time Large and Small Beam Measurements From An MR-Linac Using Cherenkov Imaging Technique in a Water Tank. (Wash U)

[WE-FG-KDBRB1-1](#): C Glide-Hurst, S P. Nejad-Davarani, J Kenney, D Du, J Kim, I Chetty. Strategies to Mitigate Gantry Angle Specific Inhomogeneities in a Low-Field MR-Linac. (Henry Ford)

[WE-FG-KDBRB1-10](#): J Ginn, D O'Connell, D Thomas, D Low, J Lamb. Model-Interpolated Gating for MRI-Guided Radiotherapy. (UCLA)

[WE-FG-KDBRB1-11](#): K Mittauer, P Yadav, S McMain, B Paliwal, J Bayouth. Characterization of Ferromagnetic Influence of a MR-Guided Radiotherapy (MRgRT) System and Vault: Cobalt to Linac. (U Wisconsin)

[WE-FG-KDBRB1-7](#): J Ginn, D Low, J Lamb. An Evaluation of Image-Derived Respiratory Surrogates for MRI-Guided Radiotherapy. (UCLA)

[WE-FG-KDBRB1-9](#): J Andreozzi, P Bruza, J Cammin, D Gladstone, B Pogue, O Green. Electron Return Effect Predictions From Treatment Planning System of An MR-Linac Underestimate the Observations Seen Using Scintillation and Cherenkov Optical Imaging. (Dartmouth/Wash U)

[WE-J-KDBRC-7](#): C Brunnuell, K Vigen, H Musunuru, M Bassetti, B Paliwal, P Yadav. Phantom- and Task-Based Image Quality On a Low Field MR Integrated Treatment Delivery System Compared to Diagnostic Systems. (U Wisconsin)

[WE-J-KDBRC-8](#): X Wu, C Robinson, P Cuculich, O Green, S Mutic, H Gach. Fast B0 Map of Cardiovascular Implantable Electronic Devices at Low Magnetic Fields. (Wash U)

[WE-J-KDBRC-9](#): HM Gach, S Nikolova, R Nikolov, R Lotey, S Mutic, O Green. A Solution to Gantry Angle Dependent Magnetic Field Inhomogeneities for MR-IGRT. (Wash U)

ESTRO 2018 CONFERENCE PAPERS

Oral Presentations

SBRT using MR-guided, video-assisted gated treatment delivery during patient breath holds ([#oc-0185](#))
J. van Sornsens de Koste, M. Palacios, A. Bruynzeel, B. Slotman, S. Senan, F. Lagerwaard

Real-time long-term multi-object tracking on cineMR using a tracking-learning-detection framework ([#oc-0186](#))

J. Dhont, D. Cusumano, L. Boldrini, G. Chiloiro, L. Azario, F. Cellini, M. De Spirito, L. Omelina, J. Vandemeulebroucke, D. Verellen, V. Valentini

In room MR imaging ([#sp-0237](#))
M. Palacios

Linac MRI guided SBRT treatment in pancreatic cancer: dosimetric evaluation of a new technology ([#oc-0300](#))

D. Cusumano, S. Menna, L. Boldrini,, E. Placidi, G. Chiloiro, L. Placidi, F. Greco, G. Stimato, F. Cellini, V. Valentini, M. De Spirito, L. Azario

The effect of density overrides on treatment planning for MR-Linacs ([#oc-0408](#))

O. Schrenk, C. Spindeldreier, L. Burigo, M. Bangert, A. Pfaffenberger

A film-based end-to-end test for MR-guided online adaptive radiotherapy ([#oc-0409](#))

D. Hoffmans, O. Bohoudi, N. Niebuhr, A. Pfaffenberger, L. Battum, B. Slotman, M. Palacios, A. Bruynzeel, F. Lagerwaard

Radiotherapy plan quality using a double focused, double stacked multi-leaf collimator ([#oc-0519](#))

O. Bohoudi, M. Palacios, B. Slotman, S. Senan, A. Bruynzeel, F. Lagerwaard

MR-LINAC technological advances and potential usability in clinical setting ([#sp-0546](#))

O. Jäkel

Posters

Age and frailty do not limit Magnetic Resonance guided Radiotherapy (MRgRT) in elderly patients ([#PO-0856 link to abstract book](#))

L. Boldrini, G. Colloca, F. Cellini, G. Chiloiro, A. Bellieni, G.C. Mattiucci, M.V. Antonelli, V. Pollutri, C. Votta, M. Massaccesi, S. Manfrida, B. Fionda, V. Frascino, V. Masiello, A. Petrone, F. Catucci, S. Luzi, E. Villani, M. Balducci, V. Valentini

Estimation of gating latency in MR-guided radiotherapy by modeling the dosimetric effects ([#PO-0944 link to abstract book](#))

D. Hoffmans, J. Cuijpers

Feasibility of MRgRT neoadjuvant treatment for locally advanced rectal cancer. ([#EP-1501 link to abstract book](#))

F. Cellini, G. Chiloiro, L. Boldrini, M. Massaccesi, G. Mattiucci, M.V. Antonelli, V. Frascino, S. Luzi, S. Manfrida, V. Masiello, A. Petrone, V. Pollutri, C. Votta, F. Catucci, B. Fionda, M. Balducci, M. Gambacorta, V. Valentini

Modelling of MR-guided radiotherapy system on Monte Carlo code GEANT4 ([#EP-1766 link to abstract book](#))

H. Okamoto, S. Nishioka, K. Iijima, T. Sakasai, Y. Miura, A. Wakita, S. Nakamura, Y. Shibata, Y. Abe, H. Igaki, J. Itami

Comparison of surface dose between linac and MRI-guided radiotherapy system by film measurement ([#EP-1767 link to abstract book](#))

Y. Shibata, H. Okamoto, T. Sakasai, Y. Miura, J. Kuwahara, C. Kuroki, T. Kat, Y. Abe, J. Itami

Evaluation of dose calculation accuracy at lung-tissue interface in presence of 0.35T magnetic field ([#EP-1821 link to abstract book](#))

D. Cusumano, S. Teodoli, F. Greco, A. Fidanzio, L. Boldrini, M. Massaccesi, F. Cellini, V. Valentini, M. De Spirito, L. Azario

A prospective study developing decision algorithm for respiration-controlled radiotherapy ([#EP-2016 link to abstract book](#))

E. Kim, E.K. Chie, H.C. Kang, S.Y. Park, C.H. Choi, J.M. Park, J.I. Kim, H.G. Wu

ASTRO 2017 CONFERENCE PAPERS

Oral Presentations

Outcomes Utilizing MRI-guided and Real-Time Adaptive Pancreas Stereotactic Body Radiotherapy (SBRT)

[http://www.redjournal.org/article/S0360-3016\(17\)31390-1/abstract](http://www.redjournal.org/article/S0360-3016(17)31390-1/abstract)

Session: GI 3 - Clinical Results of Esophagogastric and Hepatobiliary Cancers

Track: Gastrointestinal Cancer

Presenter: Naomi Jiang, MD

Distortion-Free Diffusion MRI using an MRI-Guided Radiotherapy System: Sequence Validation and Preliminary Clinical Experience

[http://www.redjournal.org/article/S0360-3016\(17\)31343-3/abstract](http://www.redjournal.org/article/S0360-3016(17)31343-3/abstract)

Session: MRI-Guided Radiation Therapy

Track: Radiation and Cancer Physics

Presenter: Yu Gao, MS

MRI-Directed EP-Guided Noninvasive Cardiac Radioablation (ENCORE) for Treatment of Ventricular Tachycardia (VT)

[http://www.redjournal.org/article/S0360-3016\(17\)31342-1/abstract](http://www.redjournal.org/article/S0360-3016(17)31342-1/abstract) Session: MRI-Guided Radiation Therapy

Track: Radiation and Cancer Physics

Presenter: Olga Green

Rapid Access Palliative Radiation Workflow Using MRI-Guided Single-Session Simulation, Online Adaptation, and Treatment

[http://www.redjournal.org/article/S0360-3016\(17\)31347-0/abstract](http://www.redjournal.org/article/S0360-3016(17)31347-0/abstract) Session: MRI-Guided Radiation Therapy

Track: Radiation and Cancer Physics

Presenter: Anna-Maria Alicia De Costa, MD, PhD

Towards Tumor Margins Reduction: Tracking Accuracy Evaluation of an MRI-RT System

[http://www.redjournal.org/article/S0360-3016\(17\)31344-5/pdf](http://www.redjournal.org/article/S0360-3016(17)31344-5/pdf)

Session: MRI-Guided Radiation Therapy

Track: Radiation and Cancer Physics

Presenter: David Cusumano

Stereotactic MR-Guided Adaptive Radiation Therapy (SMART) for Locally Advanced Pancreatic Tumors

[http://www.redjournal.org/article/S0360-3016\(17\)31345-7/fulltext](http://www.redjournal.org/article/S0360-3016(17)31345-7/fulltext)

Session: MRI-Guided Radiation Therapy

Presentation#: 269

Presenter: Anna Bruynzeel, MD, PhD

Role of Daily Plan Adaption during Breath-Hold MR-Guided Stereotactic Ablative Radiotherapy for Adrenal Metastases

[http://www.redjournal.org/article/S0360-3016\(17\)31346-9/abstract](http://www.redjournal.org/article/S0360-3016(17)31346-9/abstract) Session: MRI-Guided Radiation Therapy

Track: Radiation and Cancer Physics

Presentation#: 270

Presenter: Miguel Palacios, PhD

ePoster

Stereotactic MR-Guided Adaptive Radiotherapy (SMART) for Ultra-Central Thorax Lesions: Results of a Phase 1 Trial

[http://www.redjournal.org/article/S0360-3016\(17\)31634-6/abstract](http://www.redjournal.org/article/S0360-3016(17)31634-6/abstract) Session: Lung e-

Track: Lung Cancer

Presentation#: 1152

Presenter: Lauren E Henke, MD

Differential Response Rates of Gastrointestinal Tumors During Real-time MRI-Guided Radiation Therapy: Opportunities for Treatment Individualization

[http://www.redjournal.org/article/S0360-3016\(17\)31535-3/abstract](http://www.redjournal.org/article/S0360-3016(17)31535-3/abstract) Session: Imaging for Response Assessment

Track: Radiation and Cancer Physics

Presentation#: 1055

Presenter: Hima Bindu Musunuru, MBBS, MRCP, FRCR

Accuracy and Temporal Efficiency of Self-Directed Breath Hold During MRI-Guided Radiation Therapy

[http://www.redjournal.org/article/S0360-3016\(17\)31603-6/abstract](http://www.redjournal.org/article/S0360-3016(17)31603-6/abstract) Session: Image Guided and Adaptive Therapy

Track: Radiation and Cancer Physics

Presentation#: 1122

Presenter: John Bayouth

Poster

High Dose Adaptive MRI Guided Radiation Therap Improves Overall Survival of Inoperable Pancreatic Cancer

[http://www.redjournal.org/article/S0360-3016\(17\)32096-5/abstract](http://www.redjournal.org/article/S0360-3016(17)32096-5/abstract)

Presentation#: 2443

Presenter: Souman Rudra, MD

Phase I Study of Stereotactic Body Radiotherapy for Liver Tumors Utilizing MRI-guided Tri-Co Teletherapy System

[http://www.redjournal.org/article/S0360-3016\(17\)32047-3/abstract](http://www.redjournal.org/article/S0360-3016(17)32047-3/abstract) Presentation#: 2395

Presenter: Percy Lee

Dose-Dependent Increase in Solid Tumor Heterogeneity Measured by the Standard Deviation of T2 Relaxation Time Constant

[http://www.redjournal.org/article/S0360-3016\(17\)33420-X/pdf](http://www.redjournal.org/article/S0360-3016(17)33420-X/pdf) Presentation#: 3744

Presenter: Chenyang Wang, MD, PhD

Longitudinal diffusion MRI for early assessment of treatment response in sarcoma patients after pre-operative radiation therapy

[http://www.redjournal.org/article/S0360-3016\(17\)33443-0/abstract](http://www.redjournal.org/article/S0360-3016(17)33443-0/abstract) Presentation#: 3766

Presenter: Yingli Yang, PhD

Evaluation of Single Fraction High-Gradient Partial Breast Irradiation as the Sole Method of Radiation Therapy for Low-Risk Stage 0 and 1 Breast Cancer – Early Results of a Single Institution Prospective Clinical Trial

[http://www.redjournal.org/article/S0360-3016\(17\)31788-1/abstract](http://www.redjournal.org/article/S0360-3016(17)31788-1/abstract) Presentation#: 2143

Presenter: Imran Zoberi, MD

Feasibility of Stereotactic Body Radiation Therapy for Non-Small Cell Lung Cancer Using a Linear Accelerator-Based Magnetic Resonance Image Guided Radiation Therapy System

[http://www.redjournal.org/article/S0360-3016\(17\)33208-X/fulltext](http://www.redjournal.org/article/S0360-3016(17)33208-X/fulltext) Presentation#: 3536

Presenter: Bin Cai, PhD

Novel Use of 0.35T MRI Guidance for High Dose Rate Brachytherapy in the Treatment of Cervical Cancer

[http://www.redjournal.org/article/S0360-3016\(17\)32370-2/pdf](http://www.redjournal.org/article/S0360-3016(17)32370-2/pdf) Presentation#: 2711

Presenter: Huaising Cindy Ko, MD

Stereotactic MR-Guided Adaptive Radiation Therapy (SMART) for Prostate Cancer

[http://www.redjournal.org/article/S0360-3016\(17\)33300-X/abstract](http://www.redjournal.org/article/S0360-3016(17)33300-X/abstract) Presentation#: 3626

Track: Physics

Presenter: Frank Lagerwaard, MD, PhD

Impact of Daily Adaptive Plans for Stereotactic MR-Guided Radiation Therapy (SMART) in Early Stage Lung Cancer

[http://www.redjournal.org/article/S0360-3016\(17\)33389-8/abstract](http://www.redjournal.org/article/S0360-3016(17)33389-8/abstract) Presentation#: 3713

Track: Physics

Presenter: Suresh Senan, PhD, MBBS

Treatment Plan Quality of Tri-Co-60 Intensity Modulated Radiation Therapy Compared to Volumetric Modulated Arc Therapy for Cervical Cancer

[http://www.redjournal.org/article/S0360-3016\(17\)33362-X/fulltext](http://www.redjournal.org/article/S0360-3016(17)33362-X/fulltext) Presentation#: 3687

Track: Physics

Presenter: Jong Min Park, PhD

Dosimetric Characteristics of Double-Focused MLCs in MRI-Guided Radiation Therapy

[http://www.redjournal.org/article/S0360-3016\(17\)33355-2/pdf](http://www.redjournal.org/article/S0360-3016(17)33355-2/pdf) Presentation#: 3680

Track: Physics

Presenter: Hiroyuki Okamoto, PhD

AAPM 2017 CONFERENCE PAPERS

Oral Presentation

MR-Guided Radiotherapy; Radiation Therapy Optimized for MRI

C Glide-Hurst, Presenting Author

TU-FG-FS4-0 (Tuesday, August 1, 2017) 1:45 PM - 3:45 PM Room: Four Seasons 4

Validation Phantom of Dosimetric and Deformable Accuracy for Purposes of Commissioning An MR-Guided Online Adaptive Radiotherapy (ART) Program

K Mittauer*, P Hill, J Bayouth,

TU-D-FS4-1 (Tuesday, August 1, 2017) 11:00 AM - 12:15 PM Room: Four Seasons 4

Clinical Indications and Applications of MRI Guided Radiotherapy

Bassetti, Michael, Presenting Authors

Session: MR-guided Radiotherapy

TU-FG-FS4-0 (Tuesday - 8/1/2017) 1:45 PM - 3:45 PM Room: Four Seasons 4

Advances in MRI-based motion management for radiation therapy

J Cai, Presenting Author

TH-EF-FS4-0 (Thursday, August 3, 2017) 1:00 PM - 3:00 PM Room: Four Seasons 4

Optimization of Treatment Planning Workflow and Tumor Coverage During Daily Adaptive MR-G-RT of Pancreatic Cancer

S Olberg1*, O Green2, B Cai, D Yang, V Rodriguez, H Zhang, P Parikh, S Mutic, J Park

SU-K-601-12 (Sunday, July 30, 2017) 4:00 PM - 6:00 PM Room: 601

Performance of a Multi Leaf Collimator System for MR-Guided Radiation Therapy

B Cai*, H Li, D Yang, V Rodriguez, A Curcuru, Y Wang, J Wen, R Kashani, S Mutic, O Green

MO-F-FS1-7 (Monday, July 31, 2017) 4:30 PM - 6:00 PM Room: Four Seasons 1

A Method to Accelerate Monte Carlo Calculation Based QA for MRI Guided Online Adaptive Radiation Therapy

Y Wang*, T Mazur, J Park, D Yang, S Mutic, H Li,

TU-D-205-1 (Tuesday, August 1, 2017) 11:00 AM - 12:15 PM Room: 205.

Development of a Fast Monte Carlo Dose Calculation System for Online Adaptive Radiation Therapy Quality Assurance

Y Wang*, T Mazur, J Park, D Yang, S Mutic, H Li

TU-D-205-3 (Tuesday, August 1, 2017) 11:00 AM - 12:15 PM Room: 205

Fluence-Weighted Gating Considerations in MR-Guided Radiotherapy

T Mazur*, Y Wang, H Li, S Mutic, O Green

TU-FG-FS2-12 (Tuesday, August 1, 2017) 1:45 PM - 3:45 PM Room: Four Seasons 2.

Optimizing and troubleshooting MRI for radiation therapy - H Gach, Presenting Author MO-DE-702-0

(Monday, July 31, 2017) 1:45 PM - 3:45 PM Room: 702

Shape Context Based Deformable Surface Registration for the Gastrointestinal Tract; Y Lu1*, R Kashani2, L Henke1, I Chen1, A Curcuru1, P Parikh1, (1) Washington University in St. Louis, St. Louis, MO, (2) University of Michigan, Ann Arbor, MI.

MO-F-205-8 (Monday, July 31, 2017) 4:30 PM - 6:00 PM Room: 205

MR Image Processing, Registration & Planning On ViewRay

Yingli Yang, Presenting Author

Session - MR in RT: MR Image Processing, Registration and Planning in Radiation Therapy

MO-F-FS2-3 (Monday - 7/31/2017) 4:30 PM - 6:00 PM Room: Four Seasons 2

Respiratory Motion-Resolved, Self-Gated 4D-MRI Using Rotating Cartesian K-Space (ROCK): Initial Clinical Experience On An MRI-Guided Radiotherapy System

F Han, Z Zhou, D Du, Y Gao, M Cao, N Shaverdian, J Hegde, M Steinberg, P Lee, A Raldow, D Low, K Sheng, Y Yang, P Hu

TU-D-601-5 (Tuesday, August 1, 2017) 11:00 AM - 12:15 PM Room: 601.

A Preliminary Evaluation of Respiratory Motion Modeling at 0.35T for MRI-Guided Radiotherapy

J Ginn, D O'Connell, D Thomas, N Agazaryan, M Cao, Y Yang, D Low, J Lamb

TU-FG-FS2-2 (Tuesday, August 1, 2017) 1:45 PM - 3:45 PM Room: Four Seasons 2.

Accelerated 3D BSSFP Imaging for Treatment Planning On a Low-Field MRI-Guided Radiotherapy System

Y Gao*, Z Zhou, F Han, M Cao, N Shaverdian, J Hegde, B Bista, M Steinberg, P Lee, A Raldow, D Low, P Hu, Y Yang

TU-FG-FS2-3 (Tuesday, August 1, 2017) 1:45 PM - 3:45 PM Room: Four Seasons 2.

Cardiac BSSFP Cine MRI for MR Guided Radiation Therapy of Centrally Located Thoracic Tumors

Y Yang*, M Cao, S Rashid, F Han, Y Gao, J Lamb, P Beron, P Lee, D Low, P Hu

TU-FG-FS2-4 (Tuesday, August 1, 2017) 1:45 PM - 3:45 PM Room: Four Seasons 2.

Dosimetric Impact of Air Cavities in Gastrointestinal Tract for MR-Guided Stereotactic Body Radiotherapy of Pancreas Cancers

J Neylon*, C Wang, P Lee, D Du, Y Yang, J Lamb, K Sheng, N Agazaryan, D Low, M Cao

TU-H-605-9 (Tuesday, August 1, 2017) 4:30 PM - 6:00 PM Room: 605

Dynamic MRI for radiation therapy - K Sheng, Presenting Author

MO-DE-702-0 (Monday, July 31, 2017) 1:45 PM - 3:45 PM Room: 702

MRI-Guided Soft Tissue Alignment Improved Dose Delivery Accuracy for Head And Neck Radiation Therapy, D Wang*, J Neylon, A Santhanam, Y Yang, R Chin, X Qi, UCLA, Los Angeles, CA WE-RAM2-GePD-J(A)-5 (Wednesday, August 2, 2017) 10:00 AM - 10:30 AM Room: Joint Imaging-Therapy ePoster Lounge - A

Feasibility of Adaptive MR-Guided SBRT of Lung Cancers

N Dogan*, K Padgett, G Simpson, A Ishkanian

TU-D-FS4-7 (Tuesday, August 1, 2017) 11:00 AM - 12:15 PM Room: Four Seasons 4

ePoster

Validation of Plan Verification QA and Workflow Process Through Benchmark Plans for Commissioning of An MR-Guided Online Adapted Radiotherapy (ART) Program

K Mittauer*, P Hill, J Bayouth, University of Wisconsin, Madison, WI

MO-L-GePD-J(A)-1 (Monday, July 31, 2017) 1:15 PM - 1:45 PM Room: Joint Imaging-Therapy ePoster Lounge - A

Low-Field 4D MRI for MRI-Guided Treatment Planning and Dose Delivery

H Gach1*, T Mazur1, H Wang1, H Song2, M Fernandez-Seara3, V Stenger4, B Vajko5, J Dempsey6, Y Motai7, S Mutic1, O Green1

MO-RAM-GePD-JT-3 (Monday, July 31, 2017) 9:30 AM - 10:00 AM Room: Joint Imaging-Therapy ePoster Theater

Gating Performance Considerations in MR-Guided Radiation Therapy

E Omari, T Mazur, H Gach, O Green

MO-L-GePD-J(A)-2 (Monday, July 31, 2017) 1:15 PM - 1:45 PM Room: Joint Imaging-Therapy ePoster Lounge – A

Stability Test for MRI Quality Assurance in Radiation Therapy

B McClain*, A Curcuru, O Green, S Mutic, H Gach

MO-RPM-GePD-IT-1 (Monday, July 31, 2017) 3:45 PM - 4:15 PM Room: Imaging ePoster Theater

A Quick and Inexpensive QA Test Phantom and Procedure for Large Volume Phased Array Receiver Coils

A Curcuru*, B McClain, S Mutic, O Green, H Gach

MO-RPM-GePD-IT-5 (Monday, July 31, 2017) 3:45 PM - 4:15 PM Room: Imaging ePoster Theater

Motion-Compensated Free-Breathing 3D MRI for MR Simulation Using Rotating Stack-Of-Stars Acquisition

Z Zhou*, F Han, Y Gao, M Cao, M Steinberg, P Lee, A Raldow, D Low, Y Yang, P Hu

MO-L-GePD-I-5 (Monday, July 31, 2017) 1:15 PM - 1:45 PM Room: Imaging ePoster Lounge

An Evaluation of Patient Independent Image Distortion in a 0.35T MRI-Guided Radiotherapy System

J Ginn1*, N Agazaryan1, M Cao1, U Baharom2, D Low1, Y Yang1, Y Gao1, P Hu1, P Lee1, J Lamb1

U-C1-GePD-JT-1 (Tuesday, August 1, 2017) 9:30 AM - 10:00 AM Room: Joint Imaging-Therapy ePoster Theater

Clinical Assessment of Spatial Uncertainty for a Combined 0.35T MR and EBRT Treatment Machine

J Neylon*, K Sandler, D Du, Y Yang, J Lamb, K Sheng, D Low, M Cao
TU-RPM-GePD-J(B)-6 (Tuesday, August 1, 2017) 3:45 PM - 4:15 PM Room: Joint Imaging-Therapy ePoster Lounge – B

Quantification of the Low Field MRI Image Quality for Deformable Registration
E Boehnke1*, F Han1, P Hu1, Y Yang1, K Sheng2
TU-L-GePD-J(A)-6 (Tuesday, August 1, 2017) 1:15 PM - 1:45 PM Room: Joint Imaging-Therapy ePoster Lounge – A
Radiomics Feature Variability On 0.35T MR-Guided-RT System
K Padgett, I Mihaylov
TU-L-GePD-JT-1 (Tuesday, August 1, 2017) 1:15 PM - 1:45 PM Room: Joint Imaging-Therapy ePoster Theater

ESTRO 2017 CONFERENCE PAPERS

Oral Presentation

[OC-0161](#): Patient tolerance of stereotactic MR-guided adaptive radiation therapy: an assessment using PRO's

R. Bakker, M. Jeulink, S. Tetar, S. Senan, B. Slotman, F. Lagerwaard, A. Bruynzeel, VU University Medical Center, Radiotherapy, Amsterdam, The Netherlands

Session: Novelties in image guidance

[SP-0212](#): Automatic image segmentation and structure evaluation for on-line adaptive RT
S. Mutic, Washington University School of Medicine, Department of Radiation Oncology, St. Louis, USA

Session: Ultra fast online therapy adaptation (replanning, dose accumulation QA)

[OC-0262](#): Implementation of patient specific QA for daily adaptive MR-guided radiation therapy
M. Palacios, T. Apicella, D. Hoffmans, T. Rosario, M. Admiraal, I. Kawrakow*, J. Cuijpers, VU Medical Center, Radiation Oncology Department, Amsterdam, The Netherlands.

*ViewRay- Inc., Research & Development, Mountain View, USA.

Session: Best of online MRI-guided radiotherapy

[SP-0396](#): Can we perform RCTs evaluating MR guided radiotherapy?

V. Valentini, Università Cattolica del Sacro Cuore - Policlinico A. Gemelli, Gemelli ART, Rome, Italy.

Session: MR guided radiotherapy: the new standard of care in 10 years time

[OC-0425](#): Clinical experience with stereotactic MR-guided adaptive radiation therapy for pancreatic tumors

A. Bruynzeel, F. Lagerwaard, O. Bohoudi, S. Tetar, N. Haasbeek, S. Oei, B. Slotman, M. Meijerink, S. Senan, M. Palacios, VU University Medical Center, Radiotherapy, Amsterdam, The Netherlands

Session: Upper and Lower GI

[SP-0494](#): Using a MRI-guided radiation therapy system for prostate cancer patients

O. Bohoudi, A. Bruynzeel, S. Senan, B. Slotman, M. Palacios, F. Lagerwaard, VUMC, Radiotherapy, Amsterdam, The Netherlands.

Session: Focus on prostate cancer: what is the best of radiotherapy we need to treat our patients with?

[OC-0490](#): A robust and fast planning approach for adaptive MR-guided treatment of pancreatic cancer

O. Bohoudi, A. Bruynzeel, B. Slotman, S. Senan, F. Lagerwaard, M. Palacios, VUMC, Radiotherapy, Amsterdam, The Netherlands.

Session: Inter-fraction motion management

[SP-0593](#): Clinical commissioning of MR guided treatment systems

O. Green, Washington University School of Medicine, Department of Radiation Oncology, St. Louis, USA.

Session: Applications and challenges in dosimeters for MR-Linacs

[OC-0231](#): The suitability of radiochromic film in 0.35T magnetic field CO-60 compared with conventional 6MV

D. Barten, L. van Battum, D. Hoffmans, S. Heukelom
VUMC, Radiotherapie, Amsterdam, The Netherlands

Poster

[PV-0322](#): Rapid Early Response of Gastroesophageal Junction Tumors During Real-time MRI-Guided Radiotherapy

H. Musunuru, S. Rosenberg, J. Bayouth, K. Mitteur, M. Ritter, B. Paliwal, M. Witek, A. Baschnagel, N. Uboha, S. Lubner, N. Loconte, P. Harari, M. Bassetti, University of Wisconsin Hospital and Clinics, Medical Oncology, Madison, USA

Session 7: Upper and lower GI

ASTRO 2016 CONFERENCE PAPERS

Oral Presentation

Speaker: Clifford Robinson, MD

Session EDU 44 - Practical clinical implementation and use of adaptive radiotherapy

Topic: Practical clinical implementation and use of adaptive radiotherapy

Speaker: Sasa Mutic, PhD

Panel 23 - MRI Guided Radiotherapy: clinical experience, promise, value and pitfall

Speaker: Jeff Michalski, MD

Session - International Session 2 - ASTRO/ESTRO:In Room Adaptive Imaging with a Focus on MRI
Topic: ViewRay Device Experience

Speaker: Minsong Cao, PhD

Session: MRI Guided Radiotherapy: Clinical Experience, Promise, Value and Pitfall

Title: Longitudinal studies based on daily MRI images for IGRT

[134](#): Dan Nguyen

Title: Automated triplet beam orientation optimization for MRI guided Co-60 radiotherapy

[135](#): Xiangrong Qi, PhD

Title: MRI-guided soft tissue alignment for head and neck radiotherapy: Margin reduction and its clinical feasibility

[136](#): Stephen Rosenberg, MD

Title: Real-time MRI-Guided Radiotherapy for Gastroesophageal Junction/Gastric Cancers

[138](#): Andrzej Wojcieszynski, MD

Title: Prospective Results of Real-Time MRI-Guided Lumpectomy Cavity Boost Treatment

ePoster

[1000](#): Benjamin Fischer-Valuck, MD

Topic: Treatment of gastric MALT lymphoma utilizing a magnetic resonance image-guided radiation therapy (MR-IGRT) system: evaluation of interfractional target motion.

[1139](#): Lauren Henke, MD

Topic: Online adaptive magnetic resonance guided (OAMR) - stereotactic body radiation therapy for abdominal malignancies: Prospective dosimetric results from a Phase I trial - *NOTE: Lauren won the Physics Award Winner in the Resident ePoster Recognition Award - will receive trophy at Final Program.*

[1146](#): Michael Reilly, PhD

Topic: Quantitative and dosimetric evaluation of offline adaptive radiotherapy toward establishing a decision support framework for evaluating the necessity for real-time adaptation

[2114](#): I. Zoberi

First Ever Magnetic Resonance Image Guided Radiation Therapy for Accelerated Partial Breast Irradiation: Early Results of a Single Institution's Prospective Experience

[2679](#): Benjamin Fischer-Valuck, MD

Title: Magnetic resonance image-guided radiation therapy (MR-IGRT) for the treatment of prostate cancer: Initial clinical experience and patient selection.

[2635](#): Olga Green, PhD

Title: Vector analysis of bladder cancer patient setup utilizing a magnetic resonance image-guided radiation therapy (MR-IGRT) system

[2503](#): Lauren Henke, MD

Title: Adaptive MR-guided stereotactic body radiotherapy (AMR-SBRT) for oligometastatic or unresectable primary abdominal malignancies: Results of a prospective phase I trial

[3572](#): Sasa Mutic, PhD

Title: The design and implementation of a novel compact linac based MRI guided radiation therapy (MR-IGRT) system

[1116](#): Kathryn Mittauer, PhD

Title: Multi-Institutional Investigation of Relative Pancreatic Tumor to Duodenal Motion in MRI-Guided Radiotherapy for Potential Online Adaptive Radiotherapy (Poster # 1114)

[2352](#): I. Chen, PhD

Title: Quantification of Interfractional Gastrointestinal Tract Motion for Pancreatic Cancer Radiation Therapy

[2738](#): Mitchell Kamrava, MD

Title: Assessment of Intrafraction Motion of the Vaginal Apex During Postoperative MRI-Guided Radiation Therapy (Poster # 2738)

[3555](#): Daniel Low, PhD

Title: The Physics of a Novel Compact Linear Accelerator-Based Magnetic Resonance Imaging-Guided Radiation Therapy System (Poster # 3555)

[3656](#): M L Cardenas, PhD

Real-Time Magnetic Resonance Imaging Quantification of Esophageal Motion During Stereotactic Body Radiation Therapy

AAPM 2016 CONFERENCE PAPERS

Oral Presentation

Session: Online Adaptive Radiotherapy - Considerations for Practical Clinical Implementation

3:25 pm: Fast Online Replanning Techniques - X Li

MO-E-BRC-3 (Monday, August 1, 2016) 2:45 PM - 3:45 PM Room: Ballroom C

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31880>

Implications for Online Adaptive and Non-Adaptive Radiotherapy of Gastric and Gastroesophageal Junction Cancers Using MRI-Guided Radiotherapy

K Mittauer*, M Geurts, R Toya, M Bassetti, P Harari, B Paliwal, J Bayouth

TH-CD-202-11 (Thursday, August 4, 2016) 10:00 AM - 12:00 PM Room: 202
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32020>

Indications for Online Adaptive Radiotherapy Based On Dosimetric Consequences of Interfractional Pancreas-To-Duodenum Motion in MRI-Guided Pancreatic Radiotherapy

K Mittauer^{1*}, S Rosenberg¹, M Geurts¹, M Bassetti¹, I Chen², L Henke², J Olsen³, R Kashani², A Wojcieszynski¹, P Harari¹, Z Labby¹, P Hill¹, B Paliwal¹, P Parikh², J Bayouth¹

TU-AB-BRA-11 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32019>

Session: Motion Management in Current Stereotactic Body Radiation Therapy (SBRT) Practice

9:10 AM : MRI-guided tracking and gating - O Green, Presenting Author

MO-B-201-0 (Monday, August 1, 2016) 8:30 AM - 9:30 AM Room: 201

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31900>

Online Adaptive Radiotherapy - Considerations for Practical Clinical Implementation

2:45 PM : Online Adaptive MR-Guided RT: Workflow and Clinical Implementation - R Kashani,

MO-E-BRC-0 (Monday, August 1, 2016) 2:45 PM - 3:45 PM Room: Ballroom C

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31880>

Interactive Auto-Segmentation for Bowel in Online Adaptive MRI-Guided Radiation Therapy by Using a Multi-Region Labeling Algorithm

Y Lu^{*}, I Chen, R Kashani, H Wan, N Maughan, D Muccigrosso, P Parikh

SU-C-BRA-1 (Sunday, July 31, 2016) 1:00 PM - 1:55 PM Room: Ballroom

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33579>

Use of Gradient Echo Plural Contrast Imaging (GEPCI) in MR-Guided Radiation Therapy: A Feasibility Study Targeting Brain Treatment

B Cai^{1*}, J Wen², Y Rao¹, C Tsien¹, J Huang¹, O Green¹, S Mutic¹, D Yablonskiy², H Gach

SU-D-207A-4 (Sunday, July 31, 2016) 2:05 PM - 3:00 PM Room: 207A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33824>

A Novel Doubly-Focused Multileaf Collimator Design for MR-Guided Radiation Therapy

H Li^{1*}, S Mutic¹, D Low², O Green¹, G Fought³, I Kawrakow³, A Sharma³, S Shvartsman³, J Dempsey

TH-AB-BRA-1 (Thursday, August 4, 2016) 7:30 AM - 9:30 AM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32757>

MOSFET-Based Dosimetry in An MR Image-Guided Radiation Therapy System: Comparison with and Without a Static 0.3T Magnetic Field

J Cammin^{*}, A Curcuru, H Li, S Mutic, O Green

TH-AB-BRA-6 (Thursday, August 4, 2016) 7:30 AM - 9:30 AM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32340>

PENELOPE-Based GPU-Accelerated Dose Calculation System Applied to MRI-Guided Radiation Therapy

Y Wang*, T Mazur, O Green, Y Hu, H Li, V Rodriguez, H Wooten, D Yang, T Zhao, S Mutic, H Li, TH-AB-BRA-7 (Thursday, August 4, 2016) 7:30 AM - 9:30 AM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32440>

3D Remote Dosimetry for MRI-Guided Radiation Therapy: A Hybrid Approach
L Rankine1,2*, S Mein3, J Adamovics4, B Cai1, A Curcuru1, T Juang3, D Miles3, S Mutic1, Y Wang1, M Oldham5, H Li1
TH-CD-BRA-2 (Thursday, August 4, 2016) 10:00 AM - 12:00 PM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32901>

Magnetic Field Effects On Gafchromic-Film Response in MR-IGRT
F Reynoso1*, A Curcuru1, O Green1, S Mutic1, I Das2, L Santanam1,
TH-CD-BRA-6 (Thursday, August 4, 2016) 10:00 AM - 12:00 PM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33543>

Implementation and Evaluation of a New 3D Dosimetry Protocol for Validating MRI Guided Radiation Therapy Treatments
S Mein1*, L Rankine2,3, J Adamovics4, H Li3, M Oldham5
TH-CD-BRA-11 (Thursday, August 4, 2016) 10:00 AM - 12:00 PM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32686>

Quantitative Evaluation of Deformable Image Registration in MRI-Guided Adaptive Radiation Therapy
K Mooney1*, T Zhao1, Y Duan2, M Zhang3, O Green1, S Mutic1, D Yang1
TU-AB-202-6 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: 202
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31631>

Slice by Slice Approach to Quantifying Inter-Fractional Organ Motion
M Cardenas*, T Mazur, H Li, S Mutic, J Bradley, C Tsien, O Green
TU-AB-BRA-8 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33538>

Treatment of Gastric MALT Lymphoma Utilizing a Magnetic Resonance Image-Guided Radiation Therapy (MR-IGRT) System: Evaluation of Gating Feasibility
T Mazur*, H Gach, A Chundury, B Fischer-Valuck, J Huang, M Thomas, O Green
TU-AB-BRA-10 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=34431>

Quality Assurance of An Integrated Magnetic Resonance Image Guided Adaptive Radiotherapy Machine Using Cherenkov Imaging
J Andreozzi1*, K Mooney2, P Bruza1, A Curcuru2, S Saunders1, D Gladstone3, B Pogue1, O Green2
TU-AB-BRA-12 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33615>

An Effective Homomorphic Unsharp Mask Filtering Method to Correct Intensity Inhomogeneity in Daily Treatment MR Images

D Yang*, H Gach, H Li, S Mutic

TU-H-206-4 (Tuesday, August 2, 2016) 4:30 PM - 6:00 PM Room: 206

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32442>

The Physics of High Power Radiofrequency Isolation in a Novel Compact Linear Accelerator Based MRI Guided Radiation Therapy System

J Lamb1*, D Low1, S Mutic2, S Shvartsman3, T Chmielewski3, G Fought3, A Sharma3, J Dempsey

TU-H-BRA-1 (Tuesday, August 2, 2016) 4:30 PM - 6:00 PM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33146>

The Physics of Magnetic Field Isolation in a Novel Compact Linear Accelerator Based MRI-Guided Radiation Therapy System

D Low1*, S Mutic2, S Shvartsman3, T Chmielewski3, G Fought3, A Sharma3, J Dempsey3

TU-H-BRA-2 (Tuesday, August 2, 2016) 4:30 PM - 6:00 PM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32688>

Characterization of a Linear Accelerator Operating in a Compact MRI-Guided Radiation Therapy System

O Green1*, S Mutic1, D Low2, H Li1, T Chmielewski3, G Fought3, M Hernandez3, I Kawrakow3, A

Sharma3, S Shvartsman3, J Dempsey3,

TU-H-BRA-6 (Tuesday, August 2, 2016) 4:30 PM - 6:00 PM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33594>

The Design and Characteristics of a Novel Compact Linac-Based MRI Guided Radiation Therapy (MR-IGRT) System

S Mutic1*, D Low2, T Chmielewski3, G Fought3, M Hernandez3, I Kawrakow3, A Sharma3, S Shvartsman3, J Dempsey3

TU-H-BRA-8 (Tuesday, August 2, 2016) 4:30 PM - 6:00 PM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32900>

Session: MRgRT

5:36 PM : Strategies for adaptive RT - O Green, Presenting Author

WE-H-207B-0 (Wednesday, August 3, 2016) 4:30 PM - 6:00 PM Room: 207B

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31834>

Distortion-Free 3D Diffusion MRI On An MRI-Guided Radiotherapy System for Longitudinal Tumor Response Assessment

Y Gao*, Y Yang, N Rangwala, M Cao, D Low, P Hu

TU-AB-BRA-7 (Tuesday, August 2, 2016) 7:30 AM - 9:30 AM Room: Ballroom A

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32391>

Rest In Peace – ITV

11:50 AM : Gating Is the Best ITV Killer - D Low, Presenting Author

TU-D-202-0 (Tuesday, August 2, 2016) 11:00 AM - 12:15 PM Room: 202

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31647>

Assessment of Treatment Response Via Longitudinal Diffusion MRI On A MRI-Guided System: Initial Experience of Quantitative Analysis X Qi*, Y Yang, L Yang, D Low, K Sheng
WE-FG-202-8 (Wednesday, August 3, 2016) 1:45 PM - 3:45 PM Room: 202
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33220>

Longitudinal Diffusion MRI for Treatment Assessment of Sarcoma Patients with Pre-Operative Radiation Therapy
Y Yang*, M Cao, M Kamrava, D Low, K Sheng, J Lamb, N Agazaryan, D Thomas, P Hu
WE-FG-202-11 (Wednesday, August 3, 2016) 1:45 PM - 3:45 PM Room: 202
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32449>

4:52 PM: MR-driven RT Planning - M Cao, Presenting Author
WE-H-207B-0 (Wednesday, August 3, 2016) 4:30 PM - 6:00 PM Room: 207B
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31834>

Automated Triplet Beam Orientation Optimization for MRI-Guided Co-60 Radiotherapy
D Nguyen*, D Thomas, M Cao, D O'Connor, J Lamb, K Sheng
TH-AB-BRA-2 (Thursday, August 4, 2016) 7:30 AM - 9:30 AM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33176>

Simulation of Errors in Maximal Intensity Projection (MIP)-Based Lung Tumor Internal Target Volumes (ITV) Using Real-Time 2D MRI and Deformable Image Registration Based Lung Tumor Tracking
D Thomas*, A Kishan, A Santhanam, Y Min, D O'Connell, J Lamb, M Cao, N Agazaryan, Y Yang, P Lee, D Low
SU-G-BRA-4 (Sunday, July 31, 2016) 4:00 PM - 6:00 PM Room: Ballroom A
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=34032>

Poster

Spatial Accuracy Evaluation for Real-Time MR Guided Radiation Therapy Using a Novel Large-Field MRI Distortion Phantom
A Antolak*, J Bayouth, R Bosca, E Jackson
SU-G-JeP2-13 (Sunday, July 31, 2016) 4:30 PM - 5:00 PM Room: ePoster Theater
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33119>

MRI-Guided Single-Session Simulation, Online Adaptation, and Treatment
P Hill*, M Geurts, K Mittauer, J Bayouth
SU-F-J-110 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33855>

Lower Esophagus Margin Implications Based On Rapid Computational Algorithm for SBRT
M Cardenas*, T Mazur, H Li, S Mutic, J Bradley, C Tsien, O Green
SU-F-J-102 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall
<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33454>

Experimental Measurement of Optically Stimulated Luminescence Detectors in a MR-IGRT Environment
Toward Assessing Magnetic Field Effects On These Devices and Their Use as An In-Vivo Dosimeter

M Reilly*, A Curcuru, S Yaddanapudi, O Green

SU-F-T-324 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=34040>

Validation of Absolute Dose Measurements for MR-IGRT With and Without Magnetic Field

O Green1*, H Li1, S Goddu1, S Mutic1, I Kawrakow

SU-F-T-472 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33951>

Patient Localization Using MRI-Guided Soft Tissue for Head-And-Neck Radiotherapy: Indication for Margin
Reduction and Its Feasibility

X Qi*, Y Yang, N Jack, A Santhanam, L Yang, A Chen, D Low

SU-F-J-17 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31635>

Effects of Couch Position Variability On Dosimetric Accuracy with An MRI-Guided Co-60 Radiation Therapy
Machine

P Chow*, D Thomas, N Agazaryan, M Cao, D Low, Y Yang, J Lamb

SU-F-J-125 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33290>

Evaluation of a Magnetic Resonance Image Gated Radiotherapy System Using a Motion Phantom and
Radiochromic Film

J Lamb*, J Ginn, D O'Connell, D Thomas, N Agazaryan, M Cao, Y Yang, D Low

SU-F-J-151 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33782>

Respiratory Motion Resolved, Self-Gated 4D-MRI Using Rotating Cartesian K-Space Sampling

F Han*, Z Zhou, Y Yang, K Sheng, P Hu

SU-F-J-158 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32727>

MRI-Based HDR Prostate Brachytherapy: A Phantom Study for Interstitial Catheter Reconstruction with
0.35T MRI Images

S Park1*, M Kamrava1, Y Yang

SU-G-JeP2-14 (Sunday, July 31, 2016) 4:30 PM - 5:00 PM Room: ePoster Theater

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=32689>

Automatic Quantification of MLC Positional Accuracy in An MRI Guided Radiotherapy System

X Li*, M Studenski, F Yang, N Dogan, N Lamichhane, K Padgett

SU-G-JeP2-3 (Sunday, July 31, 2016) 4:30 PM - 5:00 PM Room: ePoster Theater

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=33763>

Skin exposure outside the treatment field during treatment of breast cancer with tri-Co-60 MR-IGRT system

Jong Min Park, Jung-in Kim, So-Yeon Park, Sang-Tae Kim, Kyung Hwan Shin

Poster: SU-F-T-317 (Sunday, July 31, 2016) 3:00 PM - 6:00 PM Room: Exhibit Hall

<http://www.aapm.org/meetings/2016AM/PRAbs.asp?mid=115&aid=31763>

CONFERENCE PROCEEDINGS (2005 – 2015)

2015

Acharya, S., Fischer-Valuck, B., Roach, M., Kashani, R., Ochoa, L., Yang, M., . . . Thomas, M. (2015). Magnetic Resonance (MR) Guided Accelerated Partial-Breast Irradiation (APBI): MRI Soft Tissue Contrast Allows for Decreased Margins and May Improve Cosmesis. *International Journal of Radiation Oncology Biology Physics*, 93(3).

Chen, H., Dolly, S., Victoria, J., Anastasio, M., Ruan, S., Low, D., . . . Li, H. (2015). WE-G-BRD-04: BEST IN PHYSICS (JOINT IMAGING-THERAPY): An Integrated Model-Based Intrafractional Organ Motion Tracking Approach with Dynamic MRI in Head and Neck Radiotherapy. *Medical Physics*, 42(6), 3689-3689.

Chen, H., Dolly, S., Victoria, J., Ruan, S., Low, D., Anastasio, M., . . . Li, H. (2015). SU-C-210-07: Assessment of Intra-/Inter-Fractional Internal Tumor and Organ Movement in Radiotherapy of Head and Neck Cancer Using On-Board Cine MRI. *Medical Physics*, 42(6), 3205-3206.

Chen, H., Dolly, S., Victoria, J., Fischer-Valuck, B., Wooten, H., Kashani, R., . . . Li, H. (2015). An Anatomy Driven Contour Tracking Method to Quantify Pharyngeal Airway Motion Using On-board Cine MRI in Head and Neck Radiation Therapy. *International Journal of Radiation Oncology*Biological*Physics*, 93(3).

Ellefson, S., Culberson, W., Bednarz, B., Dewerd, L., & Bayouth, J. (2015). WE-D-BRA-07: Analysis of ArcCHECK Diode Array Performance for ViewRay Quality Assurance. [Medical Physics](#), 42(6), 3668-3668.

Fischer-Valuck, B., Mazur, T., Acharya, S., Wan, H., Kashani, R., Li, H., . . . Thomas, M. (2015). Accelerated Partial-Breast Irradiation Utilizing an On-board Magnetic Resonance Image Guided Radiation Therapy System: Evaluation of Intrafraction Motion of the Lumpectomy Cavity. *International Journal of Radiation Oncology*Biological*Physics*, 93(3).

Green, O., Goddu, S., Li, H., Mutic, S., & Kawrakow, I. (2015). TH-CD-304-07: Chamber Volume Effect On Absolute Dosimetry in A Magnetic Field. *Medical Physics*, 42(6), 3724-3724.

Green, O., Rankine, L., Cai, B., Santanam, L., Kashani, R., Sharma, A., . . . Mutic, S. (2015). TH-AB-303-12: Commissioning of Magnetic Resonance Imaging-Based Tumor Tracking and Beam Control. *Medical Physics*, 42(6), 3713-3713.

Green, O., Green, N., Michalski, J., & Mutic, S. (2015). MRI-Guided Radiation Therapy for Bladder: Initial Experience. *International Journal of Radiation Oncology*Biography*Physics*, 93(3).

Hu, Y., Rankine, L., Green, O. L., Kashani, R., Li, H. H., Li, H., ... Mutic, S. (2015). Characterization of the Onboard Imaging Unit for the First Clinical Magnetic Resonance Image-Guided Radiation Therapy System. *Medical Physics*, 42(10), 5828-5837.

Lamb, J., Agazaryan, N., Cao, M., Low, D., Thomas, D., & Yang, Y. (2015). SU-E-J-198: Out-Of-Field Dose and Surface Dose Measurements of MRI-Guided Cobalt-60 Radiotherapy. *Medical Physics*, 42(6), 3310-3311.

Lamb, J., Kamrava, M., Agazaryan, N., Cao, M., Low, D., Thomas, D., & Yang, Y. (2015). SU-E-J-206: Adaptive Radiotherapy for Gynecological Malignancies with MRI-Guided Cobalt-60 Radiotherapy *Medical Physics*, 42(6), 3312-3313.

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