

BIBLIOGRAPHY

2022

Advances in Image-Guided RT: Towards Real-Time and Biological Adaptation

T. Stanescu, B. Cai, C. Coolens, C. Grassberger

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

A Treatment Planning Feasibility Study for Cranio-Spinal Irradiation (CSI) Using RefleXion X1

D. Pham, T. Ngo, B. Han, M. Surucu, S. Hiniker, N. Kovalchuk

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Biology-Guided Radiotherapy (BgRT) Treatment Planning Feasibility Study for Head-and-Neck, Abdomen, and Pelvis

N. Kovalchuk, L. Vtitzhum, D. Pham, C. Chuang, M. Gensheimer, A. Da Silva, B. Han, D. Chang, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Deep Learning Based Patient-Specific Auto-Segmentation of Target and Organs at Risk on Daily Fan-Beam CT images*

Y. Chen, S. Butler, L. Yu, Y. Zhou, L. Shen, N. Kovalchuk, H. Bagshaw, M. Gensheimer, L. Xing, B. Han

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Evaluating Accuracy of Biology-Guided Radiotherapy Using QUASAR 4D Motion Phantom

G. Bal, P. Olcott, D. Zaks, S. Kahn, J. Burns, J. Schmall, L. Shao, T. Laurence, O. Oderinde, M. Surucu, M. Narayanan, G. Kuduvali

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Evaluation of Repeatability and Reproducibility of Radiomic Features Produced by the Fan-Beam KV-CT on a Novel Ring Gantry-Based PET/CT Linear Accelerator Using Two IBSI-Compliant Software Packages

T. Ketcherside, A. Sundquist, C. Han, W. Watkins, L. Court, C. Huntzinger, Q. Chen, T. Williams, A. Liu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2022](#)

Feasibility of Biology-Guided Radiation Therapy Using a Long-Lived Antibody PET Tracer

A. Natarajan, S. Khan, D. Anders, N. Malik, H. Nguyen, O. Oderinde, F. Chin, E. Rosenthal, G. Prax

[ANNUAL MEETING, JULY 2022](#)

Feasibility of Single Fraction Brain Metastases Radiotherapy in a Novel Ring Gantry Treatment System

O.M. Oderinde, C. Schuman, M.K. Owens, M. Surucu, A. Da Silva, S.M. Shirvani

AMERICAN RADIUM SOCIETY - [ANNUAL MEETING, MAY 2022](#)

Feasibility Study of Using a Built-in KVCT Imaging System on a Novel Radiotherapy Machine with Integrated Dual-Imaging Systems for Radiotherapy Treatment Planning

C. Han, O. Oderinde, Z. Sun, A. Maniyedath, S. Shirvani, A. Liu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2022](#)

Imaging Performance of the Onboard Kilo-Voltage Fan-Beam Computed Tomography for Ring Gantry Therapy Unit

G. Gibbard, J. Tan, Y. Park, M. Lin, K. Wang, W. Lu, R. Reynolds, A. Godley, A. Pompos, S. Jiang, B. Cai, T. Zhuang

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2022](#)

IMRT and SBRT Treatment Planning Study for the First Clinical Installation of Biology-Guided Radiotherapy System

D. Pham, E. Simiele, D. Breitzkreutz, D. Capaldi, O. Oderinde, B. Han, M. Surucu, L. Vitzthum, M. Gensheimer, H. Bagshaw, A. Chin, D. Chang, N. Kovalchuk

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Independent Beam Modeling for the RefleXion X1 System

M. Chen, J. Tan, G. Gibbard, Y. Park, T. Zhuang, M. Lin, K. Wang, X. Jia, B. Cai, W. Lu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Investigation of Computation Time and Storage Saving Using Generative Adversarial Network (GAN) Source Models for Dose Simulation of a Binary MLC Linac

M. Shi, S. Cui, C. Chuang, O. Oderinde, N. Kovalchuk, K. Bush, M. Surucu, L. Xing, B. Han

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

One Year Quality Assurance Experience of the First RefleXion System

B. Han, M. Shi, S. Cui, C. Chuang, N. Kovalchuk, L. Xing, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

Process Based Tolerance and Action Limits for IMRT/SBRT Delivery on a Novel Biology-Guided Radiotherapy System

M. Ashraf, N. Kovalchuk, J. Fu, M. Shi, S. Cui, B. Han, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2022](#)

2021

Utility of Biology-Guided Radiotherapy to *De Novo* Metastases Diagnosed During Staging of High-Risk Biopsy-Proven Prostate Cancer

M. Gaudreault, D. Chang, N. Hardcastle, P. Jackson, T. Kron, G.G. Hanna, M.S. Hofman, S. Siva

FRONTIERS IN ONCOLOGY 2022;12

DOI: <https://doi.org/10.3389/fonc.2022.854589>

State of the Art of Adaptive Radiotherapy

R. Mak, R. Kashani, K. Mittauer, B. Han

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2022](#)

A Generative Adversarial Network (GAN) Based Monte Carlo Model for a Biology-Guided Radiation Therapy Machine

M. Shi, S. Cui, D. Zaks, B. Han

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

A Motion Phantom Study on Reflexion X1: The Dosimetric Impacts of Stereotactic Radiation Therapy Delivery Technique and Motion

D.P.I. Capaldi, E.A. Simiele, M.K. Owens, B.Han, M. Surucu, L. Xing, L. Vitzthum, D. Chang, N. Kovalchuk

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

Characterization of the Entire Metastatic Spectrum for Non-Small Cell Lung Cancer in the Immunotherapy Era

T.Y. Andraos, S.M. Shirvani, T. Cornwell, N. Ohri

INT J RADIATION ONCOL BIOL PHYS. 2021;111;428-429

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1220>

Characterization of Single-Dose Radiotherapy (SDRT) Performance in a New High-Speed Ring Gantry-Based LINAC System

O.M. Oderinde, S. Khan, A. Da Silva, S. Tian, X. Yang, K. Higgins, S. Shirvani, G. Kuduvalli

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

Comparison of a First-in-Class LINAC-Integrated PET System and a Diagnostic PET/CT Scanner

M. Surucu, A. Maniyedath, M. Narayanan, B. Han, N. Kovalchuk, M. Gensheimer, L. Vitzhum, A. Iagaru, V. Ferri, L. Xing, S.M. Shirvani, D.T. Chang

INT J RADIATION ONCOL BIOL PHYS. 2021;111;515-516

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1411>

Does Disease Burden on PET Predict Outcomes for Advanced NSCLC Patients Treated With First-Line Immunotherapy?

T.Y. Andraos, B. Halmos, H. Cheng, C. Huntzinger, and N. Ohri

INT J RADIATION ONCOL BIOL PHYS. 2021;111;428

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1219>

Dosimetric Comparison of Single-Isocenter and Multiple-Isocenter Techniques for Two-Lesion Lung SBRT Using the Reflexion High-Speed Ring-Gantry System

O.M. Oderinde, Y. Voronenko, S. Tian, X. Yang, K. A. Higgins, A. Da Silva, and S.M. Shirvani

INT J RADIATION ONCOL BIOL PHYS. 2021;111;139-140

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.582>

Estimating the Total US Incidence of Advanced/Metastatic Non-Small Cell Lung (NSCLC) Including Recurrent Disease

C. Huntzinger, H. Leach, Y. Fu, A. Amini, D. Peng, S.M. Shirvani

J THORACIC ONCOL. 2021;16(3)317-18

DOI: <https://doi.org/10.1016/j.jtho.2021.01.485>

Evaluating Backscattered Radiation into the Dose Monitor Chamber in the Reflexion X1 Using Monte Carlo Simulation

O.M. Oderinde, D. Zaks, C. Huntzinger, S. Shirvani, A. Maniyedath, T. Laurence, M. Lu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

Evaluation of PSMA-PET Biology-Guided Radiotherapy Sequential Boost to the PSMA-avid Subvolume in the Prostate Region in Low-Volume Advanced Prostate Cancer

M. Gaudreault, D. Chang, N. Hardcastle, P. Jackson, T. Kron, M.S. Hofman, G.G. Hanna, S.M. Shirvani, and S. Siva

INT J RADIATION ONCOL BIOL PHYS. 2021;111;52

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.136>

Feasibility of Using FDG in the Stereotactic Ablative Setting for Tracked Dose Delivery with BgRT: Results from a Prospective Study of Serial Inter-Fraction PET/CTs

A. Da Silva, P. Olcott, S. Tian, X. Yang, I. Sethi, S.M. Shirvani, S. Mazin, T.K. Owonikoko, J.D. Bradley, D.M. Schuster, K.A. Higgins

INT J RADIATION ONCOL BIOL PHYS. 2021;111;97

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.226>

First Beam QA and Commissioning Report of a Novel Biology-Guided Radiotherapy System

B. Han, N. Kovalchuk, D. Capaldi, E. Simiele, A. Purwar, J. White, D. Zaks, L. Vitzthum, D. Chang, L. Xing, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

First Beam Commissioning Report of a Novel Medical Linear Accelerator Designed for Biologically Guided Radiotherapy

B. Han, N. Kovalchuk, D.P. Capaldi, E. Simiele, J. White, A. Purwar, T. Yeung, S. Maganti, A. Mitra, Y. Voronenko, O.M. Oderinde, S.M. Shirvani, G. Kuduvalli, L. Vitzthum, D.T. Chang, L. Xing, and M. Surucu

INT J RADIATION ONCOL BIOL PHYS. 2021;111;512

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1404>

Focal Spot Size Effect of the Reflexion X1 Radiotherapy Machine: A Monte Carlo Simulation Study

O.M. Oderinde, D. Zaks, C. Huntzinger, S. Shirvani, T. Laurence, M. Lu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2021](#)

Improving Workflow Efficiency and Safety for Reflexion X1 Treatment Planning Process Via Eclipse API Scripting

E. Simiele, N. Kovalchuk

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2021](#)

IMRT Treatment Planning Study for the First Clinical Biology-Guided Radiotherapy System

D. Pham, D. Breitzkreutz, E. Simiele, D. Capaldi, L. Vitzthum, M. Gensheimer, H. Bagshaw, B. Han, M. Surucu, L. Xing, D. Chang, N. Kovalchuk

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2021](#)

Initial Evaluation of Biology-Guided Radiotherapy (BgRT) Plans Generated Using PET Acquired on the First Installation of New System

M. Surucu, M. Narayanan, B. Han, S. Khan, A. Da Silva, A. Maniyedath, T. Yeung, S.M. Shirvani, G. Kuduvalli, M. Gensheimer, L. Vitzthum, A. Iagaru, L. Xing, D.T. Chang, N. Kovalchuk

INT J RADIATION ONCOL BIOL PHYS. 2021;111;516
DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1412>

New Dosimetric Standard for Radiotherapy: Bounded Dose Volumetric Histogram Derived From Gamma Criteria

P. Olcott, Y. Voronenko, A. Da Silva, O.M. Oderinde

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2021](#)

Physical Confirmation of Biology-Guided Radiotherapy Directed at Static Targets with Varying Shapes and Background Contrast Environments

M. Narayanan, D. Zaks, P. Olcott, Y. Voronenko, S. Xu, M. Haytmyradov, D. Rigie, L. Shao, J. Burns, O.M. Oderinde, S.M. Shirvani, and G. Kuduvalli

INT J RADIATION ONCOL BIOL PHYS. 2021;111;513
DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1406>

Physical Validation of Biology-Guided Radiotherapy for Delivering a Tracked Dose Distribution to a Moving PET-Avid Target

M. Narayanan, D. Zaks, P. Olcott, Y. Voronenko, J. Burns, S. Xu, D. Rigie, M. Haytmyradov, L. Shao, O.M. Oderinde, S.M. Shirvani, M. Surucu, and G. Kuduvalli

INT J RADIATION ONCOL BIOL PHYS. 2021;111;22

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.078>

Positron Emission Tomography (PET) Characterization for Biology-Guided Radiotherapy (BgRT)

Z. Hu, M. Narayanan, V. Ferri, A. Iagaru, N. Kovalchuk, B. Han, L. Xing, S. Shirvani, D. Chang, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2021](#)

Preliminary Treatment Planning System Commissioning Results for the First Clinical Biology-Guided Radiotherapy Machine

N. Kovalchuk, B. Han, E. Simiele, D. Capaldi, D. Breitskreutz, T.P.C. Yeung, J. White, D. Zaks, M. Owens, A. Purwar, L. Vitzthum, D. Chang, L. Xing, M. Surucu

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2021](#)

Quantification of Peripheral Dose in the New Ring-gantry RefleXion X1 Radiotherapy Machine

O.M. Oderinde, S. Khan, M. Narayanan, A. Maniyedath, S. Shirvani, G. Kuduvalli

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2021](#)

Small Field Dosimetry of a Novel Biology-Guided Radiotherapy System

B. Han, N. Kovalchuk, M. Shi, K. Bush, D. Capaldi, D. Breitskreutz, E. Simiele, L. Xing, M. Surucu, C. Chuang

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE - [ANNUAL MEETING, JULY 2021](#)

2020

The kVCT System Commissioning of a Novel Medical Linear Accelerator Designed for Biology-Guided Radiotherapy

B. Han, N. Kovalchuk, D.P. Capaldi, A. Purwar, Z. Sun, A. Moghadam, J. Ye, T. Laurence, L. Vitzthum, D.T. Chang, L. Xing, M. Surucu

INT J RADIATION ONCOL BIOL PHYS. 2021;111;532-533

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1452>

Utilizing Biology-Guided Radiotherapy for Coronary Artery Avoidance During Free-Breathing External Beam Radiation Delivery

O.M. Oderinde, T. Cornwell, M. Owens, S. Tian, X. Yang, K.A. Higgins, A. Da Silva, and S.M. Shirvani

INT J RADIATION ONCOL BIOL PHYS. 2021;111;542-543

DOI: <https://doi.org/10.1016/j.ijrobp.2021.07.1476>

Benchmark Performance Measurements of a Prototype Biology-Guided Radiotherapy (BgRT) System Using TG-148 and TG-142

D. Zaks, R. Bassalow, O. Volotskova, M. Narayanan, C. Huntzinger, S.M. Shirvani, S. Mazin, G. Kuduvalli

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2020](#)

Biology-guided Radiotherapy: Redefining the Role of Radiotherapy in Metastatic Cancer

S.M. Shirvani, C. Huntzinger, T. Melcher, P. Olcott, Y. Voronenko, J. Bartlett-Roberto, S. Mazin

BR J RADIOL 2020;93:20200873

DOI: <https://doi.org/10.1259/bjr.20200873>

Characterization of IMRT, SBRT and SRS Patient Plan Quality Assurance of a Novel Biology-Guided Radiotherapy (BgRT) Machine

D. Zaks, A. Purwar, M. Narayanan, S. Khan, J. White, A. Da Silva, C. Han, J. Liang, D. Du, A. Liu, Y. Voronenko, D. Pal, D. Rigue, J. Burns, G. Kuduvalli

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2020](#)

Characterization of the IMRT and SBRT Performance of a Novel Biology-Guided Radiotherapy (BgRT) Machine Using ArcCHECK

D. Zaks, M. Narayanan, R. Bassalow, O. Volotskova, Y. Voronenko, D. Pal, D. Rigie, Jon Burns, A. Purwar, P. Olcott, G. Kuduvalli
AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2020](#)

Characterization of the IMRT Performance of a Novel Biology-Guided Radiotherapy (BgRT) Machine Using the TG-119 Methodology

A. Purwar, M. Narayanan, S. Khan, D. Zaks, J. White, C. Huntzinger, S.M. Shirvani, S. Mazin, G. Kuduvalli
AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2020](#)

Comprehensive Dosimetric Evaluation of a Biology-Guided Radiotherapy Machine in Treatment Plans for Brain, Lung, Head and Neck, Esophagus, and Prostate Malignancies

C. Han, J. Liang, A. Da Silva, J.P. Neylon, D. Du, A. Liu
INT J RADIATION ONCOL BIOL PHYS. 2020;108(2):61
DOI: <https://doi.org/10.1016/j.ijrobp.2020.02.615>

Comparative Evaluation of Treatment Plan Quality for a Prototype Biology-Guided Radiotherapy System in the Treatment of Nasopharyngeal Carcinoma

C. Han, A. Da Silva, PhD, J. Liang, C. Wohlers, C. Huntzinger, J.P. Neylon, D. Du, J.Y.C. Wong, A. Liu
MOEDDOS 2020;46(2):171-78
DOI: <https://doi.org/10.1016/j.meddos.2020.11.002>

Expanding the Definition of Oligometastatic in Lung Adenocarcinoma

A. Amini, B. Chau, I. Mambetsariev, C. Huntzinger, S.M. Shirvani, K. Reckamp, E. Massarelli, J.Y.C. Wong, R. Salgia
INT J RADIATION ONCOL BIOL PHYS. 2020;108(2):50-1
DOI: <https://doi.org/10.1016/j.ijrobp.2020.02.588>

Extending the IAEA-AAPM TRS-483 Methodology for Radiation Therapy Machines with Field Sizes Down to 10 × 2 Cm²

L. Mirzakhani, R. Bassalow, C. Hutzinger, J. Seuntjens

MED PHYS. 2020;47(10):5209-221

DOI: <https://doi.org/10.1002/mp.14325>

Evaluation of Treatment Planning Performance of a New BgRT Platform for SBRT of Multiple Metastases

A. Bulent, S. Chumra, J. George, J. Partouche

EUROPEAN SOCIETY FOR THERAPEUTIC RADIOLOGY AND ONCOLOGY - [ESTRO ANNUAL MEETING, NOVEMBER 2020](#)

Evaluation of Plan Quality of a New BgRT Delivery Platform for Spine SBRT

A. Da Silva, A. Bulent, S. Balyimez, C. Hutzinger, J. George, J. Partouche, S. Pitroda

EUROPEAN SOCIETY FOR THERAPEUTIC RADIOLOGY AND ONCOLOGY - [ESTRO ANNUAL MEETING, NOVEMBER 2020](#)

FDG-PET Metrics in Advanced Non-Small Cell Lung Cancer (NSCLC): A Modern Review and Meta-Analysis

A.C. Berkowitz, B. Halmos, H. Cheng, C. Hutzinger, N. Ohri

INT J RADIATION ONCOL BIOL PHYS. 2020;108;121

DOI: <https://doi.org/10.1016/J.IJROBP.2020.07.1256>

Feasibility of Biology-Guided Radiotherapy for Pancreatic Tumors: An Assessment of Normalized Target SUV

R.R. Patel, T. Pan, S.M. Shirvani, C. Hutzinger, A. Da Silva, V. Verma, A. Koong, E. Koay, J.W. Welsh

INT J RADIATION ONCOL BIOL PHYS. 2020;108(3);340-341

DOI: <https://doi.org/10.1016/J.IJROBP.2020.07.813>

Feasibility of Biology-guided Radiotherapy (BgRT) Targeting Fluorodeoxyglucose (FDG) Avid Liver Metastases

A. Amini, D. Du, T. Abuali, J. Neylon, D. Zuro, S.M. Shirvani, C. Hutzinger, A. Da Silva, S.K. Hui, J.Y.C. Wong, A. Liu

INT J RADIATION ONCOL BIOL PHYS. 2020;108;168-169

DOI: <https://doi.org/10.1016/J.IJROBP.2020.07.940>

**IAEA-AAPM TRS-483-Based Reference Dosimetry of the New
RefleXion Biology-guided Radiotherapy (BgRT) Machine**

L. Mirzakhani, R. Bassalow, D. Zaks, C. Hutzinger, J. Seuntjens

MED PHYS. 2020;47(10):1884-92

DOI: <https://doi.org/10.1002/MP.14631>

**Increased 18-FDG Metabolic Activity During Lung SBRT Predicts
Risk of Disease Progression: Results from a Prospective Study of
Serial Inter-Fraction PET/CTs**

S. Tian, J. Switchenko, X. Yang, I. Sethi, A. Da Silva,

T.K. Owonikoko, D.M. Schuster, W.J. Curran Jr., K.A. Higgins

INT J RADIATION ONCOL BIOL PHYS. 2020;108;59-60

DOI: <https://doi.org/10.1016/j.ijrobp.2020.07.2188>

**KV-Energy Fan-Beam CT Imaging Performance of a Novel
Biology-Guided Radiotherapy (BgRT) Machine**

Z. Sun, H. Gao, S. Xu, J. Ye, C. Hutzinger, S.M. Shirvani, S. Mazin,
T. Laurence

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2020](#)

**Performance Validation of a Novel Biology-Guided
Radiotherapy (BgRT) TPS Following the IAEA-TECDOC-1540
Methodology**

D. Zaks, R. Bassalow, O. Volotskova, M. Narayanan, C. Hutzinger,
S.M. Shirvani, S. Mazin, G. Kuduvalli

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2020](#)

**Prognostic Impact of Malignant Pleural Effusion in Patients with
Oligometastatic Non-Small-Cell Lung Cancer**

A. Amini, B. Chau, I. Mambetsariev, C. Hutzinger, S.M. Shirvani,
K. Reckamp, E. Massarelli, J. Wong, R. Salgia

INT J RADIATION ONCOL BIOL PHYS. 2020;108(2):50

DOI: <https://doi.org/10.1016/j.ijrobp.2020.02.586>

Prognostic Value of FDG-PET Metrics for Advanced NSCLC Patients Treated with First-line Immunotherapy

T.Y. Andraos, B. Halmos, H. Cheng, C. Huntzinger, N. Ohri
INT J RADIATION ONCOL BIOL PHYS. 2020;108;116-117
DOI: <https://doi.org/10.1016/j.ijrobp.2020.07.1246>

Simultaneous Integrated Boost of Lung Tumors in the Stereotactic Ablative Setting using BgRT Tracked Delivery

P. Olcott, S.M. Shirvani, S. Tian, I. Sethi, X. Yang, A. Da Silva, C. Huntzinger, S. Mazin, T.K. Owonikoko, D.M. Schuster, W.J. Curran, K.A. Higgins
INT J RADIATION ONCOL BIOL PHYS. 2020;108;306
DOI: <https://doi.org/10.1016/j.ijrobp.2020.07.731>

Suitability of PSMA-PET Biology-guided Radiotherapy for Low Volume Metastases in Newly Diagnosed Prostate Cancer

M. Gaudreault, N. Hardcastle, P. Jackson, J. Callahan, T. Kron, C. Huntzinger, S.M. Shirvani, A. Da Silva, M.S. Hofman, G.G. Hanna, S. Siva
INT J RADIATION ONCOL BIOL PHYS. 2020;108;188
DOI: <https://doi.org/10.1016/j.ijrobp.2020.07.983>

Use of a Detailed Process Map for Clinical Workflow of a New Biology-guided Radiation Therapy Machine

M.S. Hwang, R.J. Lalonde, S. Huq
INT J RADIATION ONCOL BIOL PHYS. 2020;108;367-368
DOI: <https://doi.org/10.1016/j.ijrobp.2020.07.2373>

Validation of ArcCHECK for Use with a Novel Ring Gantry-Based Biology-Guided Radiotherapy (BgRT) Machine

D. Zaks, M. Narayanan, R. Bassalow, O. Volotskova, C. Huntzinger, S.M. Shirvani, S. Mazin, G. Kuduvalli
AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2020](#)

A Clinical Workflow for a Prototype Biology-guided Radiation Therapy (BgRT) Machine

M. Hwang, R. Lalonde, D. Heron, M. Huq

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -
[ANNUAL MEETING, JULY 2019](#)

Biology-guided Radiotherapy for Lung SBRT Reduces Planning Target Volumes and Organs at Risk Doses

J. Liang, A. Da Silva, C Han, J. Neylon, A. Amini, S. Sampath, A. Liu, J. Wong

INT J RADIATION ONCOL BIOL PHYS. 2019;105:254

DOI: <https://doi.org/10.1016/J.IJROBP.2019.06.2468>

Calibration of the New RefleXion Biology-guided Radiotherapy Unit in the Context of the TRS-483 CoP

L. Mirzakhani, D. Zaks, R. Bassalow, C. Huntzinger, J. Seuntjens

RADIATION & ONCOLOGY 2019;133:973-4

DOI: [https://doi.org/10.1016/S0167-8140\(19\)32218-2](https://doi.org/10.1016/S0167-8140(19)32218-2)

Characterization of Inter-Fraction 18-FDG PET Variability During Lung SBRT: Results of a Prospective Pilot Study

S. Tian, I. Sethi, X. Yang, A. Da Silva, J. Switchenko, T. Owonikoko, D. Schuster, W. Curran, K. Higgins

INT J RADIATION ONCOL BIOL PHYS. 2019;105:536

DOI: <https://doi.org/10.1016/J.IJROBP.2019.06.2449>

Characterization of Inter-Fraction 18-FDG PET Variability During Lung SBRT: Results of a Prospective Pilot Study

S. Tian, I Sethi, X. Yang, A. Da Silva, J. Switchenko, T. Owonikoko, D. Schuster, W. Curran, K. Higgins

INTERNATIONAL ASSOCIATION FOR THE STUDY OF
LUNG CANCER -

[WORLD CONFERENCE, SEPTEMBER 2019](#)

Dosimetric and Geometric Accuracy of the Collapsed Cone Convolution Superposition (CCCS) Algorithm

C. Han, J. Liang, J. Neylon, A. Liu, A. Da Silva, S. Dandapani, J. Wong

INT J RADIATION ONCOL BIOL PHYS. 2019;105:763-64

DOI: <https://doi.org/10.1016/J.IJROBP.2019.06.799>

Dosimetric Comparison of Biologically-Guided Radiotherapy and X-Ray-Guided Stereotactic Ablative Radiotherapy for Oligometastatic Prostate Cancer

W. Hrinivich, R. Phillips, A. Da Silva, N. Radwan, M. Gorin, S. Rowe, K. Pienta, M. Pomper, J. Wong, K. Wang, P. Tran

INT J RADIATION ONCOL BIOL PHYS. 2019;104:1190

DOI: <https://doi.org/10.1016/J.IJROBP.2019.05.045>

Dosimetric Evaluation of Intracranial Stereotactic Radiosurgery Treatment Plans for a Prototype Biology-guided Radiotherapy System

C. Han, J. Liang, J. Neylon, A. Liu, A. Da Silva, S. Dandapani, J. Wong

INT J RADIATION ONCOL BIOL PHYS. 2019;105:763-64

DOI: <https://doi.org/10.1016/J.IJROBP.2019.06.799>

IAEA-AAPM TRS483 Based Reference Dosimetry for the New Biology-guided Radiotherapy (BgRT) System

L. Mirzakhani, D. Zaks, R. Bassalow, C. Huntzinger, J. Seuntjens
INTERNATIONAL CONFERENCE ON MONTE CARLO TECHNIQUES FOR MEDICAL APPLICATIONS -

[ANNUAL MEETING JUNE 2019](#)

Measurements of Leakage Radiation and Barrier Shielding Calculations for a Biology-guided Radiotherapy (BgRT) System

A. Purwar, J. Rogers, R. Bassalow, D. Zaks, D. Nett, P. Lilagan
AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JUNE 2019](#)

Reference Dosimetry of a New Biology-guided Radiotherapy (BgRT) System Following the IAEA TRS-483 CoP

L. Mirzakhani, D. Zaks, R. Bassalow, C. Huntzinger, J. Seuntjens
INTERNATIONAL ORGANIZATION OF MEDICAL PHYSICS -
[ANNUAL MEETING, JUNE 2019](#)

A Dosimetric Study to Assess the Feasibility of Prototype Treatment Planning Software for a New Biology-guided Radiotherapy System

J. Liang, A. Liu, C. Han, A. Da Silva, S. Zhang, J.Y.C. Wong
INT J RADIATION ONCOL BIOL PHYS. 2018;102(3):477
DOI: <https://doi.org/10.1016/J.IJROBP.2018.07.1363>

Dosimetric Evaluation of Treatment Plans for a Biology-Guided Radiotherapy System in Treatment of Nasopharyngeal Cancer

C. Han, A. Liu, J. Liang, A. Da Silva, S. Zhang, J.Y.C. Wong
INT J RADIATION ONCOL BIOL PHYS. 2018;102(3):527
DOI: <https://doi.org/10.1016/J.IJROBP.2018.07.1482>

Dosimetry of Radiotherapy Machines with Intermediate Non-Equilibrium Field Sizes

L. Mirzakhani, R. Bassalow, C. Huntzinger, J. Seuntjens
RADIATION AND ONCOLOGY. 2018;127(1):996-97
DOI: [https://doi.org/10.1016/S0167-8140\(18\)32156-X](https://doi.org/10.1016/S0167-8140(18)32156-X)

Evaluation of a Prototype Treatment Planning System (TPS) for Biology-guided Radiotherapy (BgRT) in the Context of Stereotactic Body Radiation Therapy (SBRT) for Oligo-metastases

J. Partouche, S.J. Chmura, J.J. Luke, A. Da Silva, B. Aydogan
INT J RADIATION ONCOL BIOL PHYS. 2018;102(3):514-15
DOI: <https://doi.org/10.1016/J.IJROBP.2018.07.1454>

2015

PSMA-directed Biologically-Guided Radiation Therapy of Castration-Sensitive Oligometastatic Prostate Cancer Patients
R. Phillips, A. Da Silva, N. Radwan, M. Gorin, S. Rowe, C. Deville, D. Song, S.C. Greco, K. Pienta, M.G. Pomper, T.L. DeWesse, J.W. Wong, P.T. Tran, K.K.H. Wang
INT J RADIATION ONCOL BIOL PHYS. 2018;102(3):152
DOI: <https://doi.org/10.1016/J.IJROBP.2018.06.367>

Use of Emission Guided Radiation Therapy Can Better Spare Critical Structures Compared With Intensity Modulated Radiation Therapy, Volumetric Modulated Arc Therapy, or Proton Therapy
S. Seyedin, O. Mawlawi, L. Turner, S. Mazin, Y. Voronenko, P. Olcott, C. Wages, P. Balter, J. Chang, D. Gomez, R. Komaki, J. Welsh
INT J RADIATION ONCOL BIOL PHYS. 2015;93:612
DOI: <https://doi.org/10.1016/J.IJROBP.2015.07.2110>

2014

Dynamic Treatment of Clinical Margins Beyond the PET-Avid Target in Emission Guided Radiation Therapy: A Retrospective Patient Study
A. Nanduri, Q. Fan, J. Yang, T. Yamamoto, E. Graves, B. Loo, L. Zhu, S. Mazin
MED PHYS. 2014;41(6):571
DOI: <https://doi.org/10.1118/1.4889675>

The Potential of Positron Emission Tomography for Intratreatment Dynamic Lung Tumor Tracking: A Phantom Study
J. Yang, T. Yamamoto, S. Mazin, E. Graves, P. Keall
MED PHYS. 2014;41(2):021718
PMID: 24506609 / DOI: <https://doi.org/10.1118/1.4861816>

2013

Demonstration of a Planning Scheme for Emission Guided Radiation Therapy (EGRT) in a Metastatic Breast Cancer Patient
Q. Fan, A. Nanduri, J. Yang, T. Yamamoto, B. Loo, E Graves, L. Zhu, S. Mazin

MED PHYS. 2013;40

DOI: <https://doi.org/10.1118/1.4815196>

PET Attenuation Correction and Non-Specific Uptake Normalization for Emission Guided Radiation Therapy

Q. Fan, A. Nanduri, L. Zhu, S. Mazin

[NUCL MED. 2013;54\(2\):645](https://doi.org/10.1118/1.4815196)

Simultaneous Tracking of Multiple Metastases Using FDG-PET Emission-Guided Radiation Therapy (EGRT) in a Breast Cancer Patient

Q. Fan, A. Nanduri, J. Yang, T. Yamamoto, B. Loo, E Graves, L. Zhu, S. Mazin

INT J RADIATION ONCOL BIOL PHYS. 2013;87(2):95

DOI: <https://doi.org/10.1016/J.IJROBP.2013.06.246>

Toward a Planning Scheme for Emission Guided Radiation Therapy (EGRT): FDG Based Tumor Tracking in a Metastatic Breast Cancer Patient

Q. Fan, A. Nanduri, J. Yang, T. Yamamoto, B. Loo, E Graves, L. Zhu, S. Mazin

MED PHYS. 2013;40(8):081708

PMID: 23927305 / DOI: <https://doi.org/10.1118/1.4812427>

2012

Emission Guided Radiation Therapy: A Simulation Study of Lung Cancer Treatment with Automatic Tumor Tracking Using a 4D Digital Patient Model

Q. Fan, A. Nanduri, L. Zhu, S. Mazin

MED PHYS. 2012;39:3922

DOI: <https://doi.org/10.1118/1.4736008>

Emission Guided Radiation Therapy (EGRT) for Lung and Prostate Cancers: A Feasibility Study on a Digital Patient

Q. Fan, A. Nanduri, S. Mazin, L. Zhu

MED PHYS. 2012;39(11):7140-52

PMID: 23127105 / DOI: <https://doi.org/10.1118/1.4761951>

Lung Cancer Patient Feasibility Study for Emission Guided Radiation Therapy

S. Mazin, A. Nanduri, J. Yang, T. Yamamoto, B. Loo, E. Graves

MED PHYS. 2012;39:3888-89

DOI: <https://doi.org/10.1118/1.4735873>

2011

A Feasibility Study for Real-Time Tumor Tracking Using Positron Emission Tomography (PET)

J. Yang, T. Yamamoto, K. Thielemens, S. Mazin, E. Graves, P. Keall

MED PHYS. 2011;38(6):3479

DOI: <https://doi.org/10.1118/1.3611924>

Free Breathing Motion Tracking in Emission Guided Radiation Therapy

S. Mazin, J. Yang, T. Yamamoto, A. Nanduri

MED PHYS. 2011;38(6):3478

DOI: <https://doi.org/10.1118/1.3611922>

2010

Emission Guided Radiation Therapy System: A Feasibility Study

S. Mazin, A. Nanduri, N. Pelc

MED PHYS. 2010;37

DOI: <https://doi.org/10.1118/1.3468226>

Emission Guided Radiation Therapy: A Simulation Study of Treatment Without Margin

Q. Fan, L. Zhu

MED PHYS. 2010;37

DOI: <https://doi.org/10.1118/1.3469024>

References cited describe research undertaken in the development of biology-guided radiotherapy (BgRT) and the RefleXion® X1, and do not represent product performance. BgRT is pending regulatory review and is not commercially available.