

# BIBLIOGRAPHY



References cited describe research undertaken in the development of SCINTIX™ biology-guided radiotherapy and the RefleXion® X1, and do not represent product performance. SCINTIX biology-guided radiotherapy is indicated for tumors in the lung and bone. 735-00034 Rev G

## **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 Detailed Process Map for Clinical Workflow of a New Biology-Guided Radiotherapy (BgRT) Machine**

**M. Hwang, R. Lalonde, M. Huq**

J APPL CLIN MED PHYS. 2022; 23:E13606

DOI: <https://doi.org/10.1002/acm2.13606>

## **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](#)

## **Beam Commissioning of the First Clinical Biology-Guided Radiotherapy System**

**B. Han, D. Capaldi, N. Kovalchuk, E. Simiele, J. White, D. Zaks, L. Xing, M. Surucu**

J APPL CLIN MED PHYS. 2022; 23:E13607

DOI: <https://doi.org/10.1002/acm2.13607>

## **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](#)

**BgRT Motion Management Maintains Target Dose Coverage for Respiratory and Non-Respiratory Motion**

P. Olcott, S. Khan, G. Bal, J. Schmall, S. Xu, Y. Voronenko, L. Shao, O.M. Oderinde, M. Surucu, M. Narayanan, G. Kuduvali

INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);116-117

DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.556>

**Characterizing Metastatic Non-Small Cell Lung Cancer Presenting to an Academic Medical Center in an Era of Changing Treatment Paradigms**

N. Raja, H.J. No, R. Von Eyben, M. Das, M. Roy, N. Myall, A.L. Chin, M. Diehn, B.W. Loo Jr, D.T. Chang, E. Pollom, L. Vitzthum

INT J RADIATION ONCOL BIOL PHYS. 2022;114(3); 407

DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.1582>

**Combined Biology-Guided Radiotherapy and Lutetium PSMA Treatment in Metastatic Prostate Cancer**

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

INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);116

DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.555>

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

N. Raja, H.J. No, R. Von Eyben, M. Das, M. Roy, N. Myall, A.L. Chin, M. Diehn, B.W. Loo Jr, D.T. Chang, E. Pollom, L. Vitzthum

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE -

[ANNUAL MEETING, JULY 2022](#)

**Disease Burden on PET Predicts Outcomes for Advanced NSCLC Patients Treated with First-Line Immunotherapy**

T.Y. Andraos, B. Halmos, H. Cheng, C. Huntzinger, S.M. Shirvani, N. Ohri

CLIN LUNG CANCER. 2022;23(4);291-299

DOI: <https://doi.org/10.1016/j.clcc.2022.02.003>

**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. Kuduvalli  
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 and Dosimetric Benefits of Adaptive Planning in Prostate Cancer Radiotherapy Using a Novel Treatment Planning Machine with Integrated Dual kVCT/PET Imaging Systems**

O.M. Oderinde, C. Han, Z. Sun, T.E. Cornwell, K. Feghali, A. Amini, S. Sampath, A. Liu, S.M. Shirvani  
INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);592  
DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.2277>

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

**Feasibility of Biology-Guided Radiotherapy Using PSMA-PET to Boost to Dominant Intraprostatic Tumour**

M. Gaudreault, D. Chang, N. Hardcastle, P. Jackson, T. Kron, M.S. Hofman, S. Siva  
CLIN TRANSL RADIAT ONCOL. 2022;35;84-89  
DOI: <https://doi.org/10.1016/j.ctro.2022.05.005>

**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 Biology-Guided Radiotherapy System**

D. Pham, E.A. Simiele, D. Breitzkreutz, D.P.I. Capaldi, B. Han,

M. Surucu, O.M. Oderinde, L. Vitzthum, M.F. Gensheimer,

A.L. Chin, H.P. Bagshaw, L. Xing, D.T. Chang, N. Kovalchuk

INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);579

DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.2247>

**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](#)

**Intensity Modulated Radiotherapy on a Novel Ring Gantry-Based  
Linac with Integrated Dual PET-CT Imaging Systems: Dosimetric  
Plan Comparison and Initial Clinical Delivery Experience**

C. Han, B. Liu, A. Tam, K. Qing, W.T. Watkins, T.M. Williams, A. Liu  
INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);534-535  
DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.2142>

**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](#)

**Repeatability and Reproducibility of Radiomic Features Produced  
over Time by the Fan-Beam kV-CT on a Novel Ring Gantry-Based  
PET/CT Linear**

T. Ketcherside, A. Sundquist, C. Han, W.T. Watkins, L.E. Court,  
C. Huntzinger, T.M. Williams, A. Liu

INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);129  
DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.956>

**Robustness of Biology-Guided Radiotherapy Delivery to PET Biodistribution Changes within Target**

S. Khan, M. Narayanan, P. Olcott, O.M. Oderinde, G. Bal, J. Schmall, S. Xu, Y. Voronenko, L. Shao, G. Kuduvali, M. Surucu  
INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);551  
DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.2180>

**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](#)

**Systematic Study of Patient-Specific Organs at Risk Auto-Segmentation on Daily kVCT Images for Adaptive Head and Neck Radiotherapy**

Y. Chen, L. Yu, Y. Zhou, L. Shen, N. Kovalchuk, L. Xing, B. Han, M.F. Gensheimer  
INT J RADIATION ONCOL BIOL PHYS. 2022;114(3);590  
DOI: <https://doi.org/10.1016/j.ijrobp.2022.07.2272>

**Treatment Planning System Commissioning of the First Clinical Biology-Guided Radiotherapy Machine**

E. Simiele, D. Capaldi, D. Breitreutz, B. Han, T. Yeung, J. White, D. Zaks, M. Owens, S. Maganti, L. Xing, M. Surucu, N. Kovalchuk  
J APPL CLIN MED PHYS. 2022; 23:E13638  
DOI: <https://doi.org/10.1002/acm2.13638>

**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>

**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. 22021;111(3);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. Vitzthum, A. Iagaru, V. Ferri, L. Xing, S.M. Shirvani, D.T. Chang**

INT J RADIATION ONCOL BIOL PHYS. 2021;111(3);515-516

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



**Comprehensive Metastatic Ablation in Advanced NSCLC Through Biology-Guided Radiotherapy – A Path Forward?**

**A.R. Filippi, M. Garassino, S.M. Shirvani, J. Feldman, K.A. Higgins**

LUNG CANCER. 2021;162;203-206

DOI: <https://doi.org/10.1016/j.lungcan.2021.10.013>

**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(3);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(3);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(3);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(3);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. Zacks, 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(3)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(3);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(3);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(3);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. Breitzkreutz, 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. Breitzkreutz, E. Simiele, L. Xing, M. Surucu, C. Chuang

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

**Small-Field Measurement and Monte Carlo Model Validation of a Novel Image-Guided Radiotherapy System**

**M. Shi, C.F. Chuang, N. Kovalchuk, K. Bush, D. Zaks, L. Xing, M. Surucu, B. Han**

MED PHYS. 2021;48(11):7450-60

DOI: <https://doi.org/10.1002/mp.15273>

**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(3);532-533

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

**The Technical Design and Concept of a PET/CT Linac for Biology-Guided Radiotherapy**

**O.M. Oderinde, S.M. Shirvani, P. Olcott, G. Kuduvalli, S. Mazin, D. Larkin**

CLIN TRANSL RADIAT ONCOL. 2021;29;106-112

DOI: <https://doi.org/10.1016/j.ctro.2021.04.003>

**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(3);542-543

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

**2020**

**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. Rigie, 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 Cm<sup>2</sup>**

L. Mirzakhaniyan, 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. Huntzinger, 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. Huntzinger, 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. Huntzinger, 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. Huntzinger, 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. Huntzinger,  
S.M. Shirvani, S. Mazin, G. Kuduvali**

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. Huntzinger, 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](#)

**2019**

---

**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](#)

2018

**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>

**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>

2015

**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>

# 2012

---

**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>

**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>

2010

---

**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>

**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>