



Billy W Loo Jr, MD PhD FASTRO FACR

Professor of Radiation Oncology (Radiation Therapy)
Radiation Oncology - Radiation Therapy

CLINICAL OFFICE (PRIMARY)

- **Stanford Dept Of Radiation Oncology**

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ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Lakshmi Venkat - Assistant Clinical Research Coordinator

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Bio

BIO

Billy W. Loo Jr., MD PhD is a Professor of Radiation Oncology, a member of the Stanford Cancer Institute, of the Molecular Imaging Program at Stanford (MIPS), and of Bio-X. He is a physician-scientist Radiation Oncologist and Bioengineer who is Director of Thoracic Radiation Oncology, Co-director of Particle Therapy, Director of New Technologies, and Principal Investigator of the FLASH Sciences Lab @Stanford.

His clinical specialty is precision targeted radiotherapy for lung/thoracic cancers, including stereotactic ablative radiotherapy (SABR) and proton therapy. Dr. Loo is a recognized expert in thoracic cancers serving on multiple national committees (including as writing member or vice-chair) that publish clinical guidelines on the treatment of lung cancer and other thoracic malignancies, particularly the National Comprehensive Cancer Network (NCCN).

His clinical research is in clinical trials and implementation of new treatment techniques and technologies, particularly for lung cancer, and development of new medical imaging methods for measuring organ function and predicting response to cancer treatment. He has developed novel applications of SABR including treatment of pulmonary emphysema and cardiac arrhythmias. He also catalyzed the development and clinical introduction of the world's first ultra-compact advanced proton therapy platform.

The research focus of the FLASH Sciences Lab @Stanford, directed by Prof. Loo, is the development and study of extremely rapid FLASH therapy to optimize the biological therapeutic index of cancer radiotherapy, and the technological infrastructure for this basic research and its clinical translation. Prof. Loo is co-inventor of a fundamentally new approach to delivering ultra-rapid, ultra-precise cancer therapy, pluridirectional high-energy agile scanning electronic radiotherapy (PHASER), and co-leads a program to develop it into a transformative and clinically practical technology.

Prof. Loo received his MD from University of California, Davis and his PhD in Bioengineering from University of California, San Francisco and Berkeley. He completed his Radiation Oncology residency training at Stanford Medicine. He is certified by the American Board of Radiology in Radiation Oncology, and is a Fellow of the American Society for Radiation Oncology (ASTRO) and a Fellow of the American College of Radiology (ACR).

CLINICAL FOCUS

- Cancer > Head and Neck Cancer
- Cancer > Radiation Oncology
- Cancer > Thoracic Oncology
- Lung Cancer
- Thoracic Cancers
- Stereotactic Ablative Radiotherapy (SABR)
- Radiation Oncology
- Radiation Therapy

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Radiation Oncology - Radiation Therapy
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director of Thoracic Radiation Oncology, Radiation Oncology, (2005- present)
- Co-Director of Particle Therapy, Radiation Oncology, (2025- present)
- Director of New Technologies, Radiation Oncology, (2011- present)
- Director of VA Radiation Oncology Services, Radiation Oncology, (2019-2025)

HONORS AND AWARDS

- Catalyst Award - AVATAR project, Stanford Medicine Catalyst (2024)
- Fellow of the American College of Radiology (FACR), ACR (2022)
- Fellow of the American Society for Radiation Oncology (FASTRO), ASTRO (2021)
- Henry S. Kaplan Memorial Prize for Teaching, Stanford University (2021)
- StartX Professor in Residence, StartX (2021)
- Educator of the Year Award, Association of Residents in Radiation Oncology (2012)
- Henry S. Kaplan Memorial Prize for Teaching in Radiation Oncology, Stanford University (2009)
- Basic Science Travel Grant, ASTRO (2005)
- Young Investigator Travel Grant, ECOG (2005)
- Molecular Biology in Clinical Oncology Workshop Scholarship, AACR (2004)
- Roentgen Resident/Fellow Research Award, RSNA (2004)
- Travel Grant Award, Best of ASCO Meeting, Denver, ASCO (2004)
- Malcolm A. Bagshaw Award, Stanford Radiation Oncology (2003)
- Graduate Student Research Award, University of California, San Francisco (1996)
- Regents Fellowship, University of California (1996)
- Laboratory Graduate Fellowship, Associated Western Universities (1994, 1995)
- Research Scholarship, California Medical Education and Research Foundation (1992)

- Rapp/Rummelsberg Research Scholarship, - (1991)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Vice Chair, National Comprehensive Cancer Network Small Cell Lung Cancer Panel (2013 - present)

PROFESSIONAL EDUCATION

- Residency: Stanford University Dept of Radiation Oncology (2005) CA
- Internship, Kaiser Permanente San Francisco Internal Medicine Residency , CA (2001)
- Medical Education: University of California Davis School of Medicine (2000) CA
- Board Certification: Radiation Oncology, American Board of Radiology (2006)
- Ph.D., U.C. San Francisco, U.C. Berkeley , Bioengineering (2000)
- A.B., U.C. Berkeley , Biophysics (1989)

PATENTS

- R. Fahrig, B.W. Loo, P.G. Maxim, S. Tantawi. "United States Patent 10,806,950 B2 Arrays of accelerating structures and rapid imaging for facilitating rapid radiation therapies", The Board of Trustees of the Leland Stanford Junior University, Oct 20, 2020
- V. Bharadwaj, V.A. Dolgashev, R. Fahrig, B.W. Loo, P.G. Maxim, S. Tantawi, C. Limborg, L. Nicolas. "United States Patent 10,576,303 B2 Methods and systems for beam intensity-modulation to facilitate rapid radiation therapies", The Board of Trustees of the Leland Stanford Junior University, Mar 3, 2020
- B.W. Loo, P.G. Maxim, V.A. Dolgashev. "Sweden Patent EP2823501B1 Pluridirectional very high electron energy radiation therapy systems", Leland Stanford Junior University, May 1, 2019
- R. Fahrig, B.W. Loo, P.G. Maxim, S. Tantawi. "United States Patent 9,962,562 B2 Arrays of accelerating structures and rapid imaging for facilitating rapid radiation therapies", The Board of Trustees of the Leland Stanford Junior University, May 8, 2018
- V. Bharadwaj, V.A. Dolgashev, R. Fahrig, B.W. Loo, P.G. Maxim, S. Tantawi, C. Limborg, L. Nicolas. "United States Patent 9,931,522 B2 Methods and systems for beam intensity-modulation to facilitate rapid radiation therapies", The Board of Trustees of the Leland Stanford Junior University, Apr 3, 2018
- B.W. Loo, P.G. Maxim, V.A. Dolgashev. "China P.Rep. Patent CN104246961B Pluridirectional very high electron energy radiation therapy systems and processes", Leland Stanford Junior University, May 17, 2017
- B.W. Loo, P.G. Maxim, V.A. Dolgashev. "United States Patent 9,018,603 B2 Pluridirectional very high electron energy radiation therapy systems and processes", The Board of Trustees of the Leland Stanford Junior University, Apr 28, 2015
- P.J. Keall, A. Sawant, P.G. Maxim, Y. Suh, L. Xing, B.W. Loo Jr., B.C. Cho. "United States Patent 8,849,373 B2 Method and apparatus for real-time target position estimation by combining x-ray and external respiratory signals", Stanford University, Sep 30, 2014
- B.W. Loo Jr., P.G. Maxim, V.A. Dolgashev. "United States Patent 8,618,521 B2 Pluridirectional very high electron energy radiation therapy systems and processes", The Board of Trustees of the Leland Stanford Junior University, Dec 31, 2013
- E. Johnston, B.W. Loo Jr., P.G. Maxim, M. Diehn. "United States Patent 8,526,702 B2 4D anatomically based image selection procedure for medical imaging", The Board of Trustees of the Leland Stanford Junior University, Sep 3, 2013

LINKS

- Dr. Loo's Lab Home Page: <https://med.stanford.edu/loo-lab.html>
- Dr. Loo's Bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/bill.loo.1/bibliography/public/>
- Twitter/X: @BLoo_LT_SABR: https://X.com/BLoo_LT_SABR
- LinkedIn: bill-w-loo: <https://www.linkedin.com/in/bill-w-loo/>
- Stanford Momentum article - A flash of hope 9/2025: <https://momentum.stanford.edu/stories/a-flash-of-hope>
- Curative Cancer Technology of the Future 7/2025: <https://youtu.be/4tdFDD5tfHk>
- Interview on Progress, Potential, & Possibilities 2/2025: <https://x.com/i/status/1892673879350354061>
- Stanford Medicine Magazine article on FLASH 1/2025: <https://stanmed.stanford.edu/advancing-cancer-science-prevention-care/#radiation>
- SLAC Colloquium Series 4/2024: https://stanford.zoom.us/rec/play/r6xAQE2hBFkqbmdw2cJ2gkFdx6ai87dMWKJYzw6pPr9M4XLGjfslOrYDHxHGGEEn_9CWloaHhNx_ojB.VrN0pSZjp1Gr9zx3?

canPlayFromShare=true&from=share_recording_detail&continueMode=true&componentName=rec-play&originRequestUrl=https%3A%2F%2Fstanford.zoom.us%2Frec%2Fshare%2FmjMgLSLnTunk5ufDMcMWctFWdrppi5Ax9Eb6Ro-z1vCieuTWzHqn07AcJ534Vlf.ToUsDRg3Nuyplo4b

- Curing Cancer at Lightning Speed - Stanford Med Alumni Day 4/2022: <https://youtu.be/EarauV5i5Fw>
- ACS Silicon Valley lecture on next generation radiation therapy for cancer 11/2019: <https://youtu.be/dB0dtH4CxEO>
- Physics World article on FLASH 8/2019: <https://physicsworld.com/a/instantaneous-brain-irradiation-limits-cognitive-impairment/>
- Physics World article on PHASER 7/2019: <https://physicsworld.com/a/phaser-linac-will-translate-flash-radiotherapy-to-the-clinic/>
- About PHASER - "The Future of Everything" 3/2019: <https://engineering.stanford.edu/news/billy-loo-flash-radiation-therapy-brings-hope-cancer-patients>
- SLAC press release on PHASER 2/2012: <https://www6.slac.stanford.edu/news/2012-02-09-slac-stanford-team-focuses-on-high-energy-electrons.aspx>
- SABR for early stage lung cancer - SurvivorNet: <https://www.survivor.net.com/articles/stereotactic-radiotherapy-has-some-benefits-for-treating-early-stage-lung-cancer/>
- Precision targeted radiotherapy for advanced lung cancer - SurvivorNet: <https://www.survivor.net.com/author/dr-billy-loo-jr/>
- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>
- DotMed Proton therapy article 3/2026: https://www.dotmed.com/news/story/66039?p_begin=0

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

As Director of Thoracic Radiation Oncology, my clinical specialty is precision targeted radiotherapy of lung and other thoracic cancers.

My clinical research focus is on clinical trials and clinical translation of advanced high-precision 4-D image-guided radiotherapy and stereotactic ablative radiotherapy (SABR), as well as novel indications of SABR such as severe pulmonary emphysema. I also conduct preclinical and translational research in novel functional and metabolic imaging and imaging biomarkers.

I am Principal Investigator of the FLASH Sciences Lab @Stanford, specializing in preclinical research on the biology, physics, and engineering of ultra-rapid FLASH radiotherapy. I also co-lead the development of a next-generation ultra-rapid and precise medical linear accelerator technology (PHASER).

CLINICAL TRIALS

- Development of Novel Serum Markers for Monitoring Response to Anti-Cancer Therapy, Recruiting
- Identification of Secreted Markers for Tumor Hypoxia in Patients with Head and Neck or Lung Cancers, Recruiting
- Molecular Analysis of Thoracic Malignancies, Recruiting
- Cervical Nodal Mets in Squamous Cell Carcinoma of H&N - MRI, FDG-PET, & Histopathologic Correlation, Not Recruiting
- Imaging and Biomarkers of Hypoxia in Solid Tumors, Not Recruiting
- Novel CT-based Ventilation Imaging for Adaptive Functional Guidance in Radiotherapy, Not Recruiting
- Phase I Accelerated Hypofractionated IGRT in Stage II-IV NSCLC and Poor Performance Status, Not Recruiting
- Phase I/II Cyberknife Precision Radiation Delivery System for Unresectable Malignant Lung Tumors, Not Recruiting
- Phase I/II Fesolimumab&Stereotactic Ablative Radiotherapy in Early Stage Non-Small Cell Lung Cancer, Not Recruiting
- Phase II Comparing 2 SBRT Schedules for Medically Inoperable Stage I Peripheral NSCLC, Not Recruiting
- Phase II Individualized Combined Modality Therapy for Stage III NSCLC, Not Recruiting
- Phase II Individualized Lung Tumor Stereotactic Ablative Radiotherapy (iSABR), Not Recruiting
- Phase II Manuka Honey in Preventing Esophagitis-Related Pain in Chemo and Radiation Tx in Lung CA, Not Recruiting
- Phase II PreOp ChemoXRT +/- Panitumumab Followed by Chemotherapy in Locally Advanced NSCLC, Not Recruiting

- Phase II Prophylactic Cranial Irradiation +/- Consolidative Extra-Cranial Irradiation in ED-SCLC, Not Recruiting
- Phase II Radical RADiotherapy & Immunotherapy for Metastatic CANcer of the Lung (RRADICAL), Not Recruiting
- Phase II Stereotactic Body Radiation Therapy (SBRT) for Operable Stage I/II NSCLC, Not Recruiting
- Phase II Trial of Individualized Adaptive RT Using During-Tx FDG-PET/CT & Modern Technology in NSCLC, Not Recruiting
- Phase III 60 Gy vs 74 Gy RT w/Carboplatin/Paclitaxel +/- Cetuximab for Stage IIIA/IIIB NSCLC, Not Recruiting
- Phase III Cisplatin & Etoposide + Thoracic RT Followed by Nivolumab/Placebo Locally Advanced NSCLC, Not Recruiting
- Phase III Comparison of Thoracic Radiotherapy Regimens for Limited SCLC + Cisplatin & Etoposide, Not Recruiting
- Phase III Sublobar Resection (+/- Brachytherapy) vs Stereotactic Body RT in High Risk Stage I NSCLC, Not Recruiting
- Pilot Perfusion CT in Lung Tumors Treated with Stereotactic Ablative Radiation Therapy (SABR), Not Recruiting
- Pilot Study Evaluate Percussive Ventilation Breathhold to Improve Lung Stereotactic Ablative Radiotherapy, Not Recruiting
- Pulmonary Interstitial Lymphography in Early Stage Lung Cancer, Not Recruiting
- Role of Audiovisual Biofeedback on Image Quality during 4D Anatomic and Functional Imaging, Not Recruiting

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Nikita Katila, Vivek Jaysukhlal Maradia, Luis Soto

Doctoral Dissertation Advisor (NonAC)

Dixin Chen

Publications

PUBLICATIONS

- **Emerging FLASH therapy platforms for stereotactic radiosurgery and body radiotherapy.** *Journal of radiosurgery and SBRT*
Chen, D., Schulz, J. B., Melemenidis, S., Skinner, L., Xing, L., Loo, B. W., Ashraf, M. R.
2026; 10 (1-2): 101-121
- **Impact of ultra-high dose rate (FLASH) versus conventional radiotherapy on tumor control in wild-type and cGAS-knockout mice**
Verma, B., Mutahar, A., Melemenidis, S., Verma, R., Whitmore, L., Dutt, S., Horst, K. C., Graves, E., Clarke, M. F., Li, L., Loo, B. W., Dirbas, F. M.
AMER ASSOC CANCER RESEARCH.2026
- **FLASH reduces radiation-induced oral mucositis in a mouse model of Fanconi anemia**
Loo, P., Pan, M., Zhao, M., Melemenidis, S., Chen, D., Casey, K. M., Epperly, M., Greenberger, J. S., Loo, B. W., Rankin, E.
AMER ASSOC CANCER RESEARCH.2026
- **FLASH radiotherapy maintains tumor control and enables safe re-irradiation while preserving normal tissue in breast cancer PDX models**
Mutahar, A., Verma, B., Melemenidis, S., Dutt, S., Casey, K. M., Qi, Z., Kuo, A., Horst, K. C., Graves, E., Clarke, M. F., Loo, B. W., Dirbas, F. M.
AMER ASSOC CANCER RESEARCH.2026
- **Radiation Therapy Without Anesthesia for a 7-Month-Old Child Using Audio-Visual Assisted Therapeutic Ambience in Radiation Therapy (AVATAR).** *Advances in radiation oncology*
Turcas, A., Ewongwo, A., Skinner, L., Diaconu, O., Coltea, V., Marosan, A., Gheorghica, L., Vancea, A., Aczberger, C., Savu, E., Mihut, E., Muddle, J., Loo, et al
2026; 11 (4): 102002
- **Association Between Inter-Fraction Volume Changes and Patient Outcomes from Stereotactic Ablative Radiotherapy for Early-Stage Lung Cancer** *CLINICAL LUNG CANCER*
Mai, W. X., Frick, M. A., Jackson, S., Richter, S. A., Hasan, M., Cheunkarndee, T., Loo, B. W., Diehn, M., Vitzthum, L., Chin, A., Kastelowitz, N., Gensheimer, M. F.

2026; 27 (3): 162-169

- **Small Cell Lung Cancer, Version 2.2026 Featured Updates to the NCCN Guidelines** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Ganti, A. P., Loo, B. W., Badiyan, S., Bassetti, M., Bestvina, C., Chiang, A., Choudhury, N., D'Avella, C. A., Daly, M., Dowlati, A., Edelman, M., Florsheim, C., Gold, et al
2026; 24 (1)
- **The potential and risks of FLASH radiotherapy in pediatric patients.** *Neuro-oncology pediatrics*
Schuemann, J., Rothwell, B., Mascia, A., Fan, Y., Loo, B. W., Yock, T., Liu, K. X., Perentesis, J., Haas-Kogan, D. A.
2026; 2 (1): wuaf014
- **The potential and risks of FLASH radiotherapy in pediatric patients** *ADAPTATION-THE JOURNAL OF LITERATURE ON SCREEN STUDIES*
Schuemann, J., Rothwell, B., Mascia, A., Fan, Y., Loo Jr, B. W., Yock, T., Liu, K. X., Perentesis, J., Haas-Kogan, D. A.
2026; 2 (1)
- **Local Control in Thoracic Stereotactic Ablative Radiotherapy: Analysis of Motion Management and Single Fraction Dosimetry from the iSABR trial.** *International journal of radiation oncology, biology, physics*
Jaoude, J. A., Cui, S., Fu, J., Worth, J. E., Campbell, M. J., Lau, B., Eswarappa, S., Richter, S. A., Meurice, N., Shirato, H., Taguchi, H., Gee, H., Romero, et al
2025
- **Multi-Institutional Verification of a Novel Predictor (Volume-Scaled SUVmax) for Successful Biology-Guided Radiotherapy Delivery of Small Targets.** *Cancers*
Ashraf, M. R., Pham, D., Bal, G., Chen, H., Park, H. S., Watkins, T., Cai, B., Badiyan, S. N., Vitzthum, L. K., Loo, B. W., Surucu, M.
2025; 17 (22)
- **Association Between Inter-Fraction Volume Changes and Patient Outcomes from Stereotactic Ablative Radiotherapy for Early-Stage Lung Cancer.** *Clinical lung cancer*
Mai, W. X., Frick, M. A., Jackson, S., Richter, S. A., Hasan, M., Cheunkarndee, T., Loo, B. W., Diehn, M., Vitzthum, L., Chin, A., Kastelowitz, N., Gensheimer, M. F.
2025
- **Translating FLASH to the clinic: treatment planning system for a FLASH-compatible dose delivery using a novel x-ray UHDR machine.** *Physics in medicine and biology*
Krim, D. E., Whelan, B. M., Harkness, M., Otto, K., Loo, B. W., Bazalova-Carter, M.
2025
- **Automated Parametric Custom Collimator Creation for Preclinical Irradiation Studies**
Schulz, J. B., Ghomsi, L. K., Chen, D., Ashraf, M. R., Skinner, L., Graves, E. E., Loo, B. W., Melemenidis, S.
WILEY.2025
- **Unsupervised Task-Specific Histology Image Stain Standardization and Crypt Detection for Evaluating Normal Tissue Flash Irradiation Response**
Yang, Z., Melemenidis, S., Jiang, H., Fu, J., Viswanathan, V., Dutt, S., Manjappa, R., Lau, B. C., Soto, L. A., Ashraf, M. R., Skinner, L., Yu, A. J., Surucu, et al
WILEY.2025
- **Slit Scanning Delivery Simulation for Flash Radiotherapy**
Chen, D., Melemenidis, S., Garza, A., Ghomsi, L. K., Schulz, J. B., Ashraf, M. R., Skinner, L., Surucu, M., Graves, E. E., Loo, B. W.
WILEY.2025
- **Differential Gastrointestinal Responses to Synchrotron-Produced Proton and Electron Irradiation Under Flash and Conventional Conditions**
Liu, K., Titt, U., Esplen, N. M., Connell, L., Konradsson, E., Yang, M., Wang, X., Takaoka, T., Li, Z., Koong, A. C., Mitra, D., Mohan, R., Loo, et al
WILEY.2025
- **Non-Small Cell Lung Cancer, Version 7.2025 Featured Updates to the NCCN Guidelines** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Riely, G. J., Wood, D. E., Aisner, D. L., Loo Jr, B. W., Axtell, A. L., Bauman, J. R., Bharat, A., Chang, J. Y., Desai, A., Dilling, T. J., Dowell, J., Durm, G. A., Gettinger, et al
2025; 23 (9): 354-362

- **A Dosimetric Comparison between BgRT-SABR Plans and C Arm Linac-Based IGRT-SABR Plans for Lung and Bone Lesions**
Pham, D., Tran, L., Vitzthum, L., Loo, B., Chin, A. L., Han, B., Surucu, M., Kovalchuk, N.
ELSEVIER SCIENCE INC.2025
- **Adaptive vs. Non-Adaptive Radiation Dose Escalation in Locally Advanced Non-Small Cell Lung Cancer (LA-NSCLC): Indirect Comparison of NRG-RTOG 0617 and 1106 Individual Patient Data**
Miccio, J. A., Hu, C., Kong, F. M., Samson, P., Gelblum, D., Loo, B. W., Videtic, J. G. M., Faria, S., Jolly, S., Tian, S., Gerber, D. E., Welsh, J. W., Nakhoul, et al
ELSEVIER SCIENCE INC.2025
- **Rapid Sterilization of Clinical Apheresis Blood Products using Ultra-High Dose Rate Radiation**
Melemenidis, S., Nguyen, K. D., Baraceres-Pineda, R. P., Barclay, C. K., Bautista, J., Lau, H., Ashraf, R. M., Manjappa, R., Dutt, S., Soto, L. A., Katila, N., Lau, B., Viswanathan, et al
ELSEVIER SCIENCE INC.2025
- **Temporal Effects of Dose and Fractionation of FLASH and Conventional Irradiation on Hippocampal Neurogenesis and Mechanisms of FLASH-Induced Neuroprotection**
Katila, N., Melemenidis, S., Dutt, S., Soto, L. A., Chen, D., Ashraf, R. M., Surucu, M., Drayson, O. G., Jensen, K. P., Turcotte, A., Maxim, P. G., Skinner, L., Baulch, et al
ELSEVIER SCIENCE INC.2025: S138
- **Development of Honokiol Prodrug in Alleviating Myocardial Mitochondrial Dysfunction and Restrictive Cardiomyopathy after Irradiation**
Jahng, W. S., Melemenidis, S., Zhou, Y., Cao, X., Hu, E., Achter, J. S., Rhee, S., Cho, S., Lundby, A., Loo, B. W., Wu, J.
ELSEVIER SCIENCE INC.2025
- **Efficacy and toxicity of hyperfractionated thoracic reirradiation. *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology***
Butler, S. S., Raclin, T., Lau, B., Raja, N., Skinner, L., Kastelowitz, N., Chin, A. L., Diehn, M., Loo, B. W., Vitzthum, L. K.
2025: 111001
- **Thymomas and Thymic Carcinomas, Version 2.2025 *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK***
Riely, G. J., Wood, D. E., Loo, B. W., Aisner, D. L., Akerley, W., Bauman, J. R., Bharat, A., Chang, J. Y., Chirieac, L. R., DeCamp, M., Desai, A., Dilling, T. J., Dowell, et al
2025; 23 (6): 255-269
- **Monte Carlo simulation of a novel medical linac concept for highly conformal x-ray FLASH cancer radiotherapy. *Scientific reports***
Krim, D., Whelan, B., Harkness, M., Otto, K., Loo, B. W., Bazalova-Carter, M.
2025; 15 (1): 17604
- **Modification of the microstructure of the CERN- CLEAR-VHEE beam at the picosecond scale modifies ZFE morphogenesis but has no impact on hydrogen peroxide production. *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology***
Kacem, H., Kunz, L., Korysko, P., Ollivier, J., Tsoutsou, P., Martinotti, A., Rieker, V., Bateman, J., Farabolini, W., Baldacchino, G., Loo, B. W., Limoli, C. L., Dosanjh, et al
2025: 110942
- **Discordance in the induction of the FLASH effect between synchrotron-based proton and linac-based electron ultra-high dose rate irradiation**
Liu, K., Titt, U., Esplen, N., Connell, L., Konradsson, E., Yang, M., Wang, X., Takaoka, T., Li, Z., Koong, A., Mitra, D., Mohan, R., Loo, et al
ELSEVIER IRELAND LTD.2025: S3912-S3913
- **Integrating ctDNA Analysis and Radiomics for Dynamic Risk Assessment in Localized Lung Cancer. *Cancer discovery***
Moding, E. J., Shahrokh Esfahani, M., Jin, C., Hui, A. B., Nabet, B. Y., Liu, Y., Chabon, J. J., Binkley, M. S., Kurtz, D. M., Hamilton, E. G., Chaudhuri, A. A., Liu, C. L., Li, et al
2025: OF1-OF21
- **Effectiveness of FLASH vs. Conventional Dose Rate Radiotherapy in a Model of Orthotopic, Murine Breast Cancer. *Cancers***
Melemenidis, S., Viswanathan, V., Dutt, S., Kapadia, N., Lau, B., Soto, L. A., Ashraf, M. R., Thakur, B., Mutahar, A. Z., Skinner, L. B., Yu, A. S., Surucu, M., Casey, et al
2025; 17 (7)
- **Rapid Sterilization of Clinical Apheresis Blood Products Using Ultra-High Dose Rate Radiation. *International journal of molecular sciences***

- Melemenidis, S., Nguyen, K. D., Baraceros-Pineda, R., Barclay, C. K., Bautista, J., Lau, H. D., Ashraf, M. R., Manjappa, R., Dutt, S., Soto, L. A., Katila, N., Lau, B., Viswanathan, et al
2025; 26 (6)
- **Systematic Review of Sublobar Resection for Treatment of High-Risk Patients with Stage I Non-Small Cell Lung Cancer** *SEMINARS IN THORACIC AND CARDIOVASCULAR SURGERY*
Merritt, R. E., Brunelli, A., Walsh, G., Murthy, S., Schuchert, M. J., Varghese Jr, T. K., Lanuti, M., Wolf, A., Keshavarz, H., Loo Jr, B. W., Suh, R. D., Mak, R. H., Criner, et al
2025; 37 (1): 99-105
 - **Discordance in acute gastrointestinal toxicity between synchrotron-based proton and linac-based electron ultra-high dose rate irradiation.** *International journal of radiation oncology, biology, physics*
Liu, K., Titt, U., Esplen, N., Connell, L., Konradsson, E., Yang, M., Wang, X., Takaoka, T., Li, Z., Koong, A. C., Mitra, D., Mohan, R., Loo, et al
2025
 - **Automated Deep Learning-Based Detection and Segmentation of Lung Tumors at CT.** *Radiology*
Kashyap, M., Wang, X., Panjwani, N., Hasan, M., Zhang, Q., Huang, C., Bush, K., Chin, A., Vitzthum, L. K., Dong, P., Zaky, S., Loo, B. W., Diehn, et al
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 - **Rapid Sterilization of Clinical Apheresis Blood Products using Ultra-High Dose Rate Radiation.** *bioRxiv : the preprint server for biology*
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 - **Systematic Review of the Comparative Studies of Image-guided Thermal Ablation, Stereotactic Radiosurgery, and Sublobar Resection for Treatment of High-Risk Patients with Stage I Non-Small Cell Lung Cancer.** *Seminars in thoracic and cardiovascular surgery*
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Oh, J., Skinner, L., Gutkin, P. M., Jiang, A., Donaldson, S. S., Loo, B. W., Wang, Y. P., Ewongwo, A., Bredfeldt, J. S., Breneman, J. C., Constine, L. S., Faught, A. M., Haas-Kogan, et al
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- **Applying a Portable Pocket Handheld Ultrasound Scanner to Monitor Tumor Volume in Preclinical Studies**
Melemenidis, S., Soto, L. A., Schulz, J. B., Ashraf, M. R., El Kaffas, A., Loo, B. W., Graves, E. E.
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- **Congruence of the Per-Fraction Pet Signal and the Delivered Doses in Biology-Guided Radiotherapy (BgRT)**
Pham, D., Vitzthum, L., Kovalchuk, N., Han, B., Chin, A. L., Loo, B. W., Surucu, M.
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- **Monte Carlo Based Treatment Planning Workflow for Pre-Clinical and Clinical Electron Flash Studies**
Ashraf, M. R., Melemenidis, S., Schulz, J. B., Loo, B. W.
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- **A Phase 2 Single-Arm Trial of High -Dose Radiotherapy Added to Immunotherapy for Patients with Metastatic Non Small Cell Lung Cancer**
Kotha, N. V., Vitzthum, L., Chin, A. L., Jackson, S., Pratapneni, A., Le-Budka, M. L., Brown, E., Barnick, K., Wakelee, H. A., Das, M., Ramchandran, K. J., Myall, N., Padda, et al
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- **Applying a Portable Pocket Handheld Ultrasound Scanner to Monitor Tumor Volume in Preclinical Studies**
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- **Congruence of the Per-Fraction Pet Signal and the Delivered Doses in Biology-Guided Radiotherapy (BgRT)**
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- **Monte Carlo Based Treatment Planning Workflow for Pre-Clinical and Clinical Electron Flash Studies**
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- **A Phase 2 Single-Arm Trial of High -Dose Radiotherapy Added to Immunotherapy for Patients with Metastatic Non Small Cell Lung Cancer**
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