Special Issue

The Advance of Pencil Beam Scanning Proton Beam Therapy in Cancers

Message from the Guest Editors

Proton therapy (PT) has developed rapidly in recent years. Over 125 proton therapy centers are in operation, and around 36 are under construction, according to the statistics from PTCOG. As the most advanced delivery technique, pencil beam scanning (PBS) allows intensity-modulated proton therapy (IMPT) to be delivered in the most conformal format. Along with zero exit dose, IMPT delivers the prescribed dose to the tumor and maximizes the protection of the surrounding organs. This Special Issue covers a wide range of PBS PT topics for cancer therapy and recent developments, including but not limited to:

- Novel approaches in improving proton planning, treatment quality, and clinical efficiency;
- Proton solutions for specific disease;
- Adaptive proton therapy;
- Imaging development and its applications in PT;
- Uncertainty mitigation and management;
- Biological models and treatment optimization;
- Applications of AI and machine learning;
- Spatially fractionated radiotherapy;
- New developments such as FLASH RT, proton arc, mini beam, to name a few;
- Combination of proton therapy and other therapies.

Other physics- and clinic-related studies on PBS PT are highly welcome.

Guest Editors

Dr. Haibo Lin

New York Proton Center, New York, NY 10035, USA

Dr. Richard A. Amos

Department of Medical Physics and Biomedical Engineering, University College London, London, UK

Dr. Heng Li

Department of Radiation Oncology, Johns Hopkins University, Baltimore, MD, USA

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Cancers
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
cancers@mdpi.com

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About the Journal

Message from the Editor-in-Chief

Cancers is an international online journal addressing both clinical and basic science issues related to cancer research. The journal is publishing in Open Access format, which will certainly evolve to ensure that the journal takes full advantage of the rapidly changing world of information and knowledge dissemination. It publishes high-quality clinical, translational, and basic science research on cancer prevention, initiation, progression, and treatment, as well as other related topics, particularly to capture the most seminal studies in the rapidly growing area of immunology, immunotherapy, and tumor microenvironment.

Editor-in-Chief

Prof. Dr. Samuel C. Mok
Department of Gynecologic Oncology and Reproductive Medicine, The University of Texas MD Anderson Cancer Center, Houston, TX 77030, USA

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