Research field:

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Major Scientific Interests of the Group

Responses in each time phase of radiation disasters are crucial such as an emergency radiation medicine in the aftermath, and continuous healthcare and radiation pollution control in the recovery period. In this course, research topics are widely opened to which are related to radiation measurement, protection and health risk management, aiming for developing new techniques or to establish evidence.

Projects for Regular Students in Doctoral or Master's Programs

- 1) Study on Dose Assessment Due to Radiation Exposure
- 2) Development of Technology for Radiation Disaster Response
- 3) Surveys and Research on Environmental Radiation
- 4) Technical Studies in Radiotherapy
- 5) Development of a Radiation Protection Education System
- 6) Research on Diagnostic Imaging Techniques

Study Programs for Short Stay Students (one week - one semester)

- 1) Clinical observation for advanced clinical research for radiation health risk science, intensity modulated radiation therapy (IMRT), stereotactic radiation therapy (SRT), image guided high dose-rate brachytherapy, and proton therapy, hyperthermia.
- 2) Participation in conferences on radiation technology and medical physics.

Selected Publications

- Mori Y, <u>Isobe T (Corresponding author)</u>, Takei H, Yoshimura Y, Yasuwo Ide, Sugaya K, Sakurai H, Sakae T.: Absolute Method for Measuring Environmental Radioactive Materials Using Imaging Plates. Health Physics 2024. (Online ahead of print)
- 2) Mori Y, <u>Isobe T (Corresponding author)</u>, Nagai Y, Tomita T, Kobayashi D, Takei H, Yanagita S, Fukushi M, Yanagawa N, Sakae T.: Proposal for training that does not use radiotherapy equipment and verification of training effects. The journal of the Japanese Association of Radiological Technicians 71(3), 246-253, 2024.
- 3) Nakajima N, <u>Isobe T</u>, Furuyama Y, Tomita T, Kobayashi D, Mori Y, Takei H, Nagai Y, Ide Y, Nemoto Murofushi K, Nakajima M, Yoshioka Y.: Analysis of source dwell position during treatment in brachytherapy using CT scout images. Journal of Contemporary Brachytherapy 15(5), 357-364, 2023.
- 4) Kim M, Zhang H, Kim T, Mori Y, Okura T, Tanaka K, <u>Isobe T</u>, Sakae T, Oh S.: Novel Approach for Glycemic Management Incorporating Vibration Stimulation of Skeletal Muscle in Obesity. International Journal of Environmental Research and Public Health 20(6), 4708, 2023.
- 5) Mori Y, <u>Isobe T (Corresponding author)</u>, Takei H, Kobayashi D, Tomita T, Sato E, Tsuda K, Yanagawa N, Nagai Y, Ide Y, Sugaya K, Sakae T.: A Proposal for an Optimized Clinical Training

Evaluation Method for Each Phase of Education for Radiologic Technologist Students. Japanese Journal of Education for Radiological Technology 10, 23-30, 2022.

- 6) Tomita T, <u>Isobe T (Corresponding author)</u>, Furuyama Y, Takei H, Kobayashi D, Mori Y, Terunuma T, Sato E, Yokota H, Takeji Sakae.: Evaluation of Dose Distribution and Normal Tissue Complication Probability of a Combined Dose of Cone-Beam Computed Tomography Imaging with Treatment in Prostate Intensity-Modulated Radiation Therapy. Journal of Medical Physics 45(2), 78-87, 2020.
- 7) Kobayashi D, <u>Isobe T (Corresponding author)</u>, Takada k, Mori Y, Takei H, Kumada H, Kamizawa S, Tomita T, Sato E, Yokota H, Sakae T.: Establishment of a New Three-Dimensional Dose Evaluation Method Considering Variable Relative Biological Effectiveness and Dose Fractionation in Proton Therapy Combined with High-Dose-Rate Brachytherapy. Journal of Medical Physics 44(4), 270-275, 2019.
- 8) <u>Isobe T</u>, Okamoto Y, Hirano Y, Takada K, Sato E, Shinoda K, Tadano K, Takei H, Kamizawa S, Mori Y, Suzuki H.: Effect of biological factors on successful measurements with skeletal-muscle 1H-MRS. Therapeutics and Clinical Risk Management 12, 1133-1137, 2016.
- 9) <u>Isobe T</u>, Mori Y, Takada K, Sato E, Sakurai H, Sakae T.: Robust Technique Using an Imaging Plate to Detect Environmental Radioactivity. Health Physics 104(4), 362-365, 2013.
- 10) <u>Isobe T</u>, Mori Y, Takada K, Sato E, Takahashi H, Sekiguchi T, Yoshimura Y, Sakurai H, Sakae T.: Evaluation of Vegetables in Tsukuba for Contamination with Radioactive Materials from the Accident at Fukushima Daiichi Nuclear Power Plant. Health Physics 105(4), 311-317, 2013.