

A Step into Medical Physics: The Beginning of a New Journey

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Physics is a diverse subject having its sub-branches spread across various fields of application. Medical Physics is one of its sub-branches which applies physics principles to medicine for disease prevention, diagnosis, and treatment, focusing on areas like radiation oncology (cancer therapy), diagnostic imaging (X-rays, MRI, CT, ultrasound), nuclear medicine, and radiation safety. Despite being a student of Physics, my interest in medical science developed early, during my sophomore year. I was fascinated by how physics could be applied to directly improve patient care. While exploring this direction, I discovered the field of medical physics, and reading research articles in radiation medicine further motivated me to pursue this path.

After graduating from the Department of Physics, University of Dhaka, I got myself admitted into the “Master of Medical Radiation Physics” program at the University of Adelaide in July, 2025. The initial step of this journey was not very smooth for me. Adjusting myself in a new environment, managing everything on my own, while maintaining a busy class schedule often felt very exhausting. Regardless of these difficulties, I was very much thrilled to learn new aspects of Medical Physics such as radiation interactions, imaging physics, and the fundamentals of radiation oncology. These experiences strengthened my understanding of the clinical responsibilities of medical physicists.



In Australia, medical physicists play a vital role in both diagnostic imaging and radiation oncology. They are essential members of hospital teams, responsible for treatment accuracy,

patient safety, quality assurance, and the clinical implementation of advanced technologies. Following completion of the Master's degree, structured residency training is required to practice clinically, reflecting the profession's strong emphasis on competency and accountability.

In October, 2025, I came to know about SCMPCR and their activities. I also attended the E-Learning Program (ELP-10) organized by them, which provided valuable exposure to contemporary topics in cancer research and radiation medicine. The program covered areas such as patient-specific QA software, surface-guided radiotherapy, 3D printing, artificial intelligence, digital image processing, Monte Carlo dose calculation, and radiotherapy optimization. Importantly, ELP-10 also addressed practical leadership skills and the scientific publication process, supporting my development as an early-career medical physicist.

With a strong interest in radiation oncology, I hope to contribute to the advancement of cancer care through precise, safe, and innovative applications of medical physics, ultimately improving outcomes for cancer patients. In conclusion, I want to say that stepping into a new field like Medical Physics may feel challenging at the beginning, however, the pleasure of acquiring new skills far outweighs the struggles and hardships in the long run.