The radiotherapy institute MAASTRO CLINIC (www.maastro.nl) provides cancer care to patients in the South-East region of the Netherlands. MAASTRO CLINIC works closely with the radiotherapy department of the University Hospital Maastricht (MUMC+) in the fields of education, clinical and pre-clinical research. MAASTRO's strategic goal is to deliver "individualized medicine": by applying advanced medical technology and scientific research the cancer treatment will be tailored to the clinical, biological and genetic characteristics of an individual patient so that the best outcome can be achieved. MAASTRO CLINIC and the MUMC+ are currently building a proton radiotherapy clinic.

MAASTRO CLINIC, a radiotherapy treatment and research facility, and Maastro LAB (www.maastrolab.nl), a basic and translational research laboratory, are embedded within the GROW research institute of the Faculty of Health, Medicine and Life Sciences (www.grow-um.nl) at Maastricht University (www.maastrichtuniversity.nl). Research carried out in the past has focused on PET/CT imaging, dual energy CT imaging, 4D ultrasound imaging for treatment verification, dose guided radiotherapy (DGRT), small animal radiation research, and proton therapy verification techniques.

Research carried out at MAASTRO LAB has been focused on the tumour microenvironment, in particular hypoxia, immunotherapy and normal tissue toxicity, all of relevance to radiation oncology. MAASTRO LAB has made several important discoveries in these fields, including demonstration that targeting hypoxia responsive mechanisms sensitizes tumors to irradiation and that targeted irradiation in combination with immunotherapy results in an abscopal effect (OR in a therapeutic effect outside the radiation field). In addition, we have initiated translational and clinical studies based on these results.

MAASTRO CLINIC and MAASTRO LAB installed a fully equipped small animal irradiation/imaging facility. MAASTRO collaborates with TU/Eindhoven, University of Toronto, the McGill University of Montreal, the University of Leuven, the Netherlands Cancer Institute, and others.

The University of Maastricht / MAASTRO CLINIC has a vacancy (4-year position) for a:

PhD student in small animal precision image-guided irradiation

In this position you will carry out research in the field of small animal radiation studies for translational research. The emphasis of your work will be on developing technology to enable precision image-guided irradiation of animal models for cancer research. We have developed our own small animal treatment planning system (SmART-Plan), which now needs to be integrated with various imaging modalities (CT, dual-energy CT, bioluminescent imaging, spectral CT, and to a lesser extent PET and MRI). You will develop a system for dose calculations for complex irradiations, e.g. taking into account breathing motion. The final aim is to enable dose painting in animal models for cancer and normal tissues. You will also have a supporting role in preclinical research trials e.g. in studies involving the interaction between radiation and the immune system. You will operate in a multidisciplinary team of physicists, biologists, physicians and engineers who share great enthusiasm for preclinical research.

We are looking for a candidate with strong Masters degree (GPA at least 3.5/4) in Biomedical Engineering or Biomedical Sciences, with a strong interest in animal radiation research and imaging. We expect you to have a certificate to enable you to handle animal experiments (in the Netherlands known as Article 9) or have passed sufficient biology-related courses enabling you to acquire this quickly. Strong interest in preclinical radiotherapy and advanced animal imaging as well as experience in software development is a must. Experience with radiotherapy and image processing is a plus. We are looking for an enthusiastic candidate able to work independently and very fluent in spoken and written English. Knowledge of the Dutch language is not a requirement. The University requires work to be published and the writing of a doctoral thesis before awarding a PhD degree. The position involves no or minimal teaching duties. You have to provide two letters of reference upon selection.

We offer an exciting project in advanced preclinical radiotherapy in a world-leading team, a pleasant working environment in a multidisciplinary team, with many learning opportunities. Conditions of Employment and salary are based on the University conditions. You will receive a fulltime contract (38 hours/week). Your salary will be according to the scale of PhD students, starting at 2147€ gross salary per month.

Further information may be obtained from prof Frank Verhaegen, Head of Clinical Physics Research, by e-mail: frank.verhaegen@maastro.nl or by calling +31-(0)88-4455792.

You can apply for this position via: