

## FELLOW IN PAEDIATRIC RADIOTHERAPY QUALITY ASSURANCE

Establishing the effectiveness of the use of radiotherapy plays an important role in achieving **better outcomes for childhood cancers patients**.

Thanks to the collaboration between SIOPE and EORTC, the QUARTET (Quality and Excellence in Radiotherapy and Imaging for Children and Adolescents with Cancer across Europe in Clinical Trials) project intends to **improve radiotherapy treatments in children and adolescents** by reducing the risk of local recurrence and long-term toxicity. The ultimate ambition of this project is to obtain **an increase in cure for children treated for cancer combined with minimal treatment-related side effects on survivors' quality of life**.

To achieve this aim, the QUARTET group investigates and assesses the effectiveness of radiotherapy in paediatric cancers through an **online prospective quality assurance programme**, in partnership with EORTC. QUARTET ensures a centralized review of prospective fields and radiation treatment plans for every child and adolescent before radiotherapy, in order to make necessary amendments if needed.

Over a period of 5 years and with an estimated number of 500 patients included per year, the project will cover children and adolescents treated for **neuroblastoma, rhabdomyosarcoma and brain tumours** as part of 9 European prospective clinical trials. More specifically, the project will:

- Use the EORTC radiotherapy quality assurance platform with experts paediatric radiotherapists, as part of the clinical trials implemented within the SIOPE community;
- Create a database for the real-time use of such quality control data and evaluation;
- Conduct research projects.

QUARTET has been funded **thanks to the generosity of [Fondatioun Kriibskrank Kanner](#)**, a Luxembourg foundation which provides multi-disciplinary support to families of children with cancer, raises awareness to improve the condition of sick children and actively supports pediatric oncology research with one goal: heal better and quicker.

### MAIN AIMS AND TASKS:

The QUARTET project offers a **one year research fellowship** (renewable to a maximum of 3 years subject to funding) with the following objectives: Development of standards for quality control of radiotherapy for paediatric tumours in Europe

1. To report the results of the RTQA Benchmark Case procedure before initiation of the trial at a particular centre. This will investigate the variation in target volume and organs at risk (OAR) definition, and report the interobserver variability when following the trial-specific delineation guidelines.
2. Apply existing TCP and NTCP models to the Benchmark Case results to estimate variation in outcome from contouring variation.
3. To determine whether the outcome of the RTQA Benchmark Case can predict the quality of radiotherapy. The rates of prospective modifications to submitted radiotherapy clinical target volumes (CTV) and the rates of modifications to submitted radiotherapy plans will be reported.
4. To assess the quality of the radiotherapy delivered, reporting the conformity index and homogeneity index, and also reporting the integral dose delivered; looking to determine whether geographical location or treatment centre size (number of patients) have any impact on this. If indicated, the reviewers will request modifications to the radiotherapy plan before its delivery to the patient.
5. To assess the cost-effectiveness of quality assurance for radiotherapy planned for the prospective studies, looking to evaluate the costs and benefits for implementation of RTQA for the respective cancer types, and determining the role for RTQA for future trials.
6. Research into novel radiotherapy treatment schemes or techniques that may increase therapeutic benefit and decrease toxicity risks, including proton therapy and brachytherapy
7. Validation of the concept of prospective quality review in radiotherapy

This fellowship will lead to a PhD. If the candidate is not yet affiliated to a university or scientific institution that can host a PhD project, the project leader can offer a PhD project through Ghent University

### PROFILE AND SKILLS:

- A radiation oncologist in training or equivalent degree
- Excellent knowledge of English
- Knowledge of and/or experience with paediatric radiation oncology
- Statistical skills are an asset
- Ability to work independently, under supervision of the radiation oncologists of the QUARTET steering group and its project leader.
- Excellent communication skills, both orally and in writing
- Have an interest in research methodology and good research practices in paediatric radiation oncology
- Motivated and has a strong sense of responsibility
- Ability to write peer-reviewed articles and grants, and to present in scientific conferences
- Be a team player
- Be able to work in an international and multidisciplinary environment
- Be under 40 years old

A letter of motivation must be sent along with a Curriculum Vitae, containing the following information:

- Full name
- Gender
- Date of birth
- Nationality
- Permanent and current address
- Phones / Fax
- E-mail
- Level of languages: Read/Write/Speak – Fluent/Good/Some
- Academic background since secondary school
- Professional qualifications and experience (please mention addresses)
- Current position (please mention address)
- Date of availability
- A list of abstracts / publications
- Three referees and their contact information
- Two letters of recommendations

All documents should be written in English.

Support to the fellow is provided by a multidisciplinary staff including medical doctors, physicists and biostatisticians. The fellowship will take place at the EORTC Headquarters in Brussels, Belgium, where also SIOPE has its office.

**The starting date of the fellowship is 2018.** The fellowship is for a period of one year, renewable to a maximum of 3 years subject to funding. EORTC and SIOPE offer a highly stimulating, professional and friendly atmosphere in an international environment.

Please send your Curriculum Vitae, a letter of intent and two letters of recommendation no later than **31 October 2017** to:

SIOPE  
QUARTET Fellowship Programme  
83 Avenue E. Mounier, 1200 Brussels, Belgium  
E-mail : [quartet@siope.eu](mailto:quartet@siope.eu)