# Medical Physicist

Advanced Oncotherapy is an innovative technology business focused on delivering a proton-based radiotherapy system using technology originally developed and tested at the world- renowned CERN facility in Switzerland.

Proton beam therapy is likely to play a crucial role in the affordable treatment of cancer in the future. Advanced Oncotherapy's system is based on a linear accelerator ('LIGHT') technology that is superior to traditional cyclotron/synchrotron accelerators and significantly less expensive to implement than its competitors. The company acquired the technology through the acquisition of A.D.A.M. SA, a CERN spin-off company, in 2013.

Commercial momentum is now building, with an order book reaching several hundred million dollars. In the UK the company has formed a JV with Circle, a leading UK healthcare company, to create a proton therapy centre at a prestigious Harley Street site which is currently being developed.

Advanced Oncotherapy's head office is in London, with R&D/ADAM located in Meyrin, Switzerland, and an installation and testing site at STFC Daresbury (UK) with further clinical research and clinician training facility in Syracuse, USA.

## Job Summary

At the direction of the Director of Medical Physics, the Medical Physicist will assume a significant role in the Medical Physics Department and will participate in meeting the overall clinical and developmental medical physics needs of the Company. This includes preparing for, commissioning, and supporting clinical treatments with the LIGHT system. Specifically, the Medical Physicist will be familiar with the general concepts guiding Radiation Therapy Physics, and with the overall technical area including Proton Therapy Quality Assurance, Treatment Planning needs, Computer Modelling, and Measurement Techniques, as required. The Medical Physicist will use unique, advanced skills in achieving the highest developmental goals, develop new procedures and conduct experiments without direct supervision, publishing results.

## Duties and Responsibilities:

1. Actively participate in the Developmental goals of the Department and Company:
    a. Treatment planning system for LIGHT
    b. Oncologic Information Systems and Therapy Control Systems for LIGHT
    c. Simulation, Acquisition, and Analysis of LIGHT beam data
    d. Workflow definition and optimization
    e. User and System Requirements, V&V, and acceptance testing.
    f. Sensor and Detector development

2. Actively participate in the clinical aspects of radiation therapy treatment planning.
    a. Maintain working familiarity with patient dosimetry.
    b. Participate in initial patient chart/plan check and weekly chart checking activities.
    c. Review and approve all treatment plans and dose calculations as required.
    d. Participate in external beam patient treatment planning when needed.
    e. Participate in the maintenance and QA of treatment-planning systems
    f. Collaborate with radiation oncologists to design patient-specific treatment applications
    g. Provide special physics consultations to the physicians in order to assist them with difficult cases.

3. Participate in routine physics QA program.
    Examples include but are not limited to:
    a. Supervise accelerator calibration
    b. Develop quality assurance policies and institute procedures.
    c. Accelerator calibration and monthly / Annual mechanical and dosimetry QA.
    d. Participate in the quality assurance for accelerators, Proton units, ancillary equipment and procedures used in Radiation Therapy
    e. Commissioning of new major equipment, i.e., linear accelerators, proton techniques and simulators.

4. Be familiar with local, state and Federal regulatory requirements. Assist in the design and development of proposed radiation oncology suites.

5. Participate in continuing education opportunities and attend selected meetings. Keep abreast of new developments in the field of Radiation Therapy Physics.

6. Acquires knowledge relevant to the field of development.
    a. Reads and critically evaluates current scientific literature pertaining to projects.
    b. Attends relevant seminars and demonstrations.

7. Perform other duties as required or assigned.

## Qualifications:
## Minimum Education & Experience:

MSc. or PhD. in Physics, Medical Physics, or an associated field, and registered or eligible as a Clinical Scientist (Medical Physics) with the UK Health Care and Professions Council

## Skills:
The following technical skills are desirable –

- Quantitative image processing and analysis
- Machine vision
- Electronics
- Data analysis
- Operation of the following imaging devices: CT, x-ray, CBCT
- Operation of the following devices: medical LINAC, proton therapy systems, animal irradiators
- Radiation detectors/sensors use and development including ionization chambers, multi-element detectors, OSL, film.
- Use and knowledge of surveying methods and materials.
- Use and knowledge of health physics instrumentation

- Computer programming
- Knowledge and experience in object-oriented analysis and software design, as well as object-oriented programming languages (e.g., C#.NET, C++, and JAVA, etc).
- Ability to create or analyze program specifications, plan, design, validate, implement and document software applications.
- Knowledge of Open GL Graphics, imaging processing, and DICOM.
- Strong skill set in the use and administration of relational databases (Access, MS SQL server) and query languages (e.g., SQL and PL/SQL).
- Ability to develop applications within an MS Windows/UNIX/Linux environment
- Knowledge of client/server design principles and network and/or distributed computing environments.
- Ability to communicate effectively both verbally and in writing.
- Ability to communicate technical concepts with non-technical personnel and adapt to changing conditions and various job details.
- Ability to work both independently and as a team member. Must be self-motivated.
- Functional knowledge of the techniques of architectural design.
- Ability to conduct meetings, which includes developing the agenda, keeping the meeting on-track, and documenting the results.
- Ability to maintain composure in stressful situations and to defuse potentially confrontational interactions with peers and customers.
- Experience with physics or engineering sensors and detectors
- Ability to initiate and conduct experiments with no supervision

## Preferred:

Experience in particle therapy equipment design, testing, and clinical operations strongly preferred.

## Physical Requirements and Working Conditions:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.
While performing the duties of this job, the employee is regularly required to stand; walk; sit; kneel, use hands to finger, handle, or feel; and talk or hear.
While performing the general duties of this job, the employee is frequently exposed to airborne particles, fumes, noxious, toxic or caustic chemical agents and odors, wastes or refuse, sharp objects, and hot surfaces. Sometimes works with hazardous biological, chemical and radioactive materials. May also be required to work with animal specimens.
The noise level in the work environment is usually moderate.

This is a Geneva-based position, but with increasing travel to our test site in STFC Daresbury and then our first client site in Harley Street, London. Potentially, this role will eventually be based in London with travel to Geneva.

Ability to travel as required, estimated at 50% of the time. Must be eligible to work in the UK, Switzerland and other parts of Europe.

# Medical Physicist

## What we offer

- a competitive salary and contribution to healthcare costs
- 24 days holiday plus the CERN closing days (approx. 6 days per year) (applicable to Geneva-based employees only)
- career progression through training, development and attendance at conferences
- a friendly, international working environment with experts in their field
- the chance to be at the cutting-edge of proton therapy research

## Applications

Interested candidates should submit:

- a cover letter
- a curriculum vitae,
- a Master's or PhD degree certificate or equivalent in a relevant field
- at a minimum, the names of 2 referees, or two letters of recommendation, and/or employment certificate/s
- any other relevant certificates

Please apply via email to our HR Director, Bridget Biggar. Bridget.biggar@avo-adam.com

For further information please email our Director of Medical Physics, Jonathan Farr. Jonathan.farr@avo-adam.com

This position opened on 14 May and will close 15 June or until filled.