JOIN OUR TEAM, CREATE A FUTURE FOR EVERYONE

Our team is the core of our mission to transform cancer treatment by expanding worldwide access to proton therapy – an advanced form of radiation therapy. We are always interested in hearing from anyone who shares our vision and believes that they can advance our mission.

Senior Accelerator Physicist

Regular, Full-Time
Wakefield, MA

Summary

ProTom's flagship product is the Radiance 330® Proton Therapy System ("Radiance 330"). This cutting-edge radiation therapy system requires monitoring, steering, and controlling a high-energy proton beam which treats at sub-mm accuracy using high-speed pulses. Under the direction of the Director of Physics, the Senior Accelerator Physicist will and lead efforts to characterize and optimize the performance of the proton beam from ionization to accelerator thru transport and into the treatment room. Areas of concentration include synchrotron theory, particle beam modeling and simulation codes, particle beam metrology (hardware and software), automated data collection and analysis, real-time controls for beam optics, and magnet design and characterization.

Job Functions and Responsibilities

1. Develop beam transport simulations including space charge effects, dozens of magnetic elements, and complex and dynamic beamline geometry.
2. Conduct empirical tests to improve beam transport models leading to automated beam control algorithms.
3. Create software simulations to enable development, analysis, and enhanced control of the accelerator injection and extraction systems.
4. Develop test methodologies to experimentally evaluate and improve beam precision and current.
5. Perform development work on beam scattering and focusing techniques and work with Engineering team members to implement improvements via design changes.
6. Create software simulations for development of improved design of magnets.
7. Work closely with ProTom's technical partners and OEMs to ensure performance of beam control and metrology systems.
8. Interface with staff at client site to educate ProTom and end users on operation of the system.
9. Demonstrate collaboration skills, working with co-workers, outside vendors/agencies and clients.

Education and Experience

1. PhD in Physics or closely related field strongly desired.
2. Minimum of 5 years' experience, beyond graduate school, in the principal responsibilities.
3. Expertise with MatLab and C++ and at least two beamline modeling codes required.
4. Excellent interpersonal skills; strong communication, verbal and written, and analytical skills.

Working Conditions

1. Office environment for the majority of time.
2. Some work will be performed at proton therapy sites, which are typically installed underground, with no natural light.
3. Occasional domestic and international travel to client, vendor, or training sites will likely be required; must be able to acquire all necessary travel documents.