POSITION SUMMARY:

The Medical Physicist is responsible for assuring the high quality radiation therapy through participation in Linac QA, radiation treatment planning, brachytherapy, image-guided radiotherapy, consultation and educational activities.

The Practice of Medical Physics means the use of principles and accepted protocols of physics to assure the correct quality, quantity, and placement of radiation during the performance of a radiological procedure. The term practice includes: radiation beam calibration and characterization; equipment quality assurance and radiological operations quality management; instrument and device specification; acceptance testing and commissioning; image quality assessment and optimization of imaging systems and processes; shielding design and protection analysis on radiation-emitting equipment and radiopharmaceuticals; determination of dose delivered to patients and others exposed to radiation; consultation and treatment planning with practitioners to determine dose to be delivered; consultation with practitioners to assure accurate radiation dose to a specific patient; and consultation intended to provide patient, staff, and/or general public radiation safety. Proper medical physics practice may include the actual performance of the activities or their establishment and supervision under appropriate circumstances.

Radiation includes both ionizing and non-ionizing radiation such as electromagnetic radiation, particulate radiation, and sonic radiation. These modalities, used for diagnostic or therapeutic purposes when prescribed by a properly qualified practitioner, are herein described as radiological procedures.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

The essential responsibility of the Qualified Medical Physicist’s clinical practice is to assure the safe and effective delivery of radiation to achieve a diagnostic or therapeutic result as prescribed in patient care. The medical physicist performs or supervises the pertinent procedures necessary to achieve this objective. The responsibilities of the medical physicist include: protection of the patient and others from potentially harmful or excessive radiation; establishment of adequate protocols to ensure accurate patient dosimetry; the measurement and characterization of radiation; the determination of delivered dose; advancement of procedures necessary to ensure image quality; development and direction of quality assurance programs; and assistance to other health care professionals in optimizing the balance between the beneficial and deleterious effects of radiation.

Primary duties include machine calibration, physics QA, weekly chart checks, LDR & HDR brachytherapy, clinical treatment planning, member radiation safety committee and
assistance with commissioning of new equipment. The Physicist provides surveys, reports and consultation related to radiation safety for applicable facilities and/or patients that meet the organizations and regulatory standards. Develops and implements quality assurance and evaluation programs for applicable radiation therapy equipment that ensure high quality images and radiation treatments and that meet regulatory requirements. Monitors and reports quality assurance activities to ensure adherence to established QA policies and procedures. Evaluates and reports the performance of equipment in a timely manner and makes recommendations to improve quality. The physicist maintains up-to-date technical knowledge of new and developing technologies and regulatory issues to support clinical and administrative decision-makers. The physicist provides in-service training to staff and physicians, as necessary, to insure high quality images and radiation treatments, a radiation-safe environment, and compliance with regulatory standards. This position also includes teaching physics to the Radiology Residents.

Clinical Service and Consultation

Many medical physicists are heavily involved with responsibilities in areas of diagnosis and treatment, often with specific patients. These activities take the form of consultations with physician colleagues. In radiation oncology departments, one important example is the planning of radiation treatments for cancer patients, using either external radiation beams or internal radioactive sources. An indispensable service is the accurate measurement of the radiation output from radiation sources employed in cancer therapy. Other important services are rendered through investigation of equipment performance, organization of quality control in imaging systems, design of radiation installations, and control of radiation hazards. The medical physicist is called upon to contribute clinical and scientific advice and resources to solve the numerous and diverse physical problems that arise continually in many specialized medical areas.

QUALIFICATION REQUIREMENTS:

General Requirements:

1. General knowledge of medical radiation physics, medical radiation safety and pertinent regulations.
2. Experience in designing, implementing and monitoring quality assurance programs in the therapeutic radiological physics subspecialty.
3. Good communication skills, demonstrated customer service skills and willingness to be part of a team.
4. Additional qualifications specific to Radiation Oncology:
5. Experience performing calibration of radiation therapy equipment (high energy accelerators - electrons and photons).
6. Brachytherapy experience- both HDR and LDR.
7. Treatment planning experience – 2-D, 3-D, IMRT, SRS and SBRT –
8. Treatment planning software - Pinnacle and BrainLab.
9. Experience in linear accelerator commissioning, high dose rate delivery systems.
10. General knowledge of computers and their applications in radiation oncology
Professional Qualifications:

Therapeutic Radiological Physics

- Development of equipment specifications for radiation therapy treatment, brachytherapy, simulation, and radiation detection
- Development of procedures for the initial and continuing evaluation of radiation therapy treatment, brachytherapy, simulation, and radiation detection equipment
- Provision of evidence of compliance of equipment for radiation therapy treatment, brachytherapy, simulation, and radiation detection, with regulatory and accreditation agency rules and recommendations
- Measurement and characterization of medical radiation from radiation therapy treatment, brachytherapy, and simulation equipment prior to clinical utilization
- Acceptance testing, evaluation and commissioning of equipment used for external-beam therapy, brachytherapy, simulation, treatment-planning, and radiation detection; acceptance testing and evaluation of their associated computer systems, algorithms, data, and output
- Evaluation of radiation oncology technical procedures prior to clinical use
- Development and/or evaluation, in conjunction with the medical practitioner, of policies and procedures related to the appropriate therapeutic use of radiation
- Development and/or evaluation, with the medical practitioner, of the dosimetric component of patients’ treatment plans.
- Review of radiation oncology dosimetry information noted in patient records
- Development and management of a comprehensive Quality Management Program that monitors, evaluates, and optimizes radiation oncology processes
- Development and/or evaluation of a comprehensive clinical radiation safety program in radiation oncology
- Direction of the Radiation Oncology Physics program to include the technical direction of staff responsible for treatment planning, machine maintenance and repair and other physics support staff.
- Provision of consultation on patient or personnel radiation dose and associated risks
- Provision of radiation oncology physics and radiation dosimetry training for medical practitioners and other health-care providers
- Provision of consultation to assure accurate radiation dose delivery
- Provision of institutional consultation on program development in radiation oncology
- Planning and specification of thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans
- Assessment and evaluation of installed shielding designed to protect patients, workers, and the general public from radiation produced incident to diagnosis or treatment of humans
• Use of imaging procedures as they pertain to the simulation, treatment planning and treatment delivery in therapeutic radiologic procedures.
• Involvement in informatics development and direction
• Other medical applications of physics as appropriate to safely carry out therapeutic radiologic procedures
• Medical Health Physics procedures associated with the practice of Therapeutic Radiology

EDUCATION, LICENSURE, REGISTRATION AND/OR CERTIFICATION REQUIREMENTS:

The candidates must have a minimum of a Master's degree in Medical Physics; or related fields from an accredited university; PhD would be preferred. Certified by the American Board of Radiology (ABR) in Therapeutic Radiological Physics or Medical Physics, or certified by the American Board of Medical Physics (ABMP) in Radiation Oncology Physics.

EXPERIENCE:

At least 5 years full time clinical experience and experience with IMRT, SRS, SBRT and IGRT are highly desirable.

COMMUNICATION SKILLS:

Ability to

Read and comprehend complex instructions, correspondence, memos and directives. Compose correspondence and business plans using correct grammar and punctuation. Communicates cooperatively and effectively with patients, physicians, family members, employees and others. Listens well, follows direction, and engages in interactive dialogues with others.

MATHEMATICAL SKILLS

Ability to

Develop and prepare budgets, variance reports, documents, payroll records, statistical surveys, and other required data.

PROFESSIONAL SKILLS:

Ability to
Perform the job according to conduct defined by AMC’s Code of Conduct and Employee Manual.

Be accurate in such matters as record-keeping.
Use good judgment when performing the functions of the job or when interacting with others.
Accept direction, carry out direction, work cooperatively with others and avoid the creation of unnecessary conflict.
Adhere to AMC’s policies, procedures and practices, and to utilize AMC’s problem-solving processes for resolving grievances or disagreements.

REASONING ABILITY:

Ability to

Independently organize work to meet established guidelines, gather data from appropriate resources.

PHYSICAL DEMANDS:

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.

While performing the duties of this job, the employee is regularly required to stand, walk, use hands to probe, handle, or feel objects, tools, or controls, reach with hands and arms, and speak and hear. The employee is regularly required to sit, and occasionally to stoop, kneel, or crouch.

The employee must occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of the job.

While performing the duties of this job, the employee may be subject to infectious materials and chemicals (see unit specific MSDS information).

The noise level in the work environment is usually moderate.

This job requires as an essential function that the majority of the time the employee be physically on-site as the work cannot be done from a remote location.
OTHER REQUIREMENTS:

All job requirements listed indicate the minimum level of knowledge, skills, and/or ability deemed necessary to perform the job proficiently. This job description is not to be construed as an exhaustive statement of duties, responsibilities, or requirements. Employees will be required to perform any other job-related instructions given by their supervisor subject to reasonable accommodations.

Candidates should send curriculum vitae with a letter of interest to:

Howell Morris
Albany Medical Center, MC 113
47 New Scotland Ave, Albany, NY 12208
email PhysicianRecruiter@mail.amc.edu
(518) 262-3381
Morrish@mail.amc.edu