

Medical Physicist

■ Job Description

Medical physics is concerned with the applications of physical energy, concepts, and methods to the diagnosis and treatment of human disease. Examples of areas in which a medical physicist may work include the application of ionizing radiation to medical diagnosis and therapy; bioelectrical investigations of the brain and heart; and the medical uses of infrared radiation, ultrasound, nuclear magnetic resonance, heat, and lasers. Radiation therapy is the major field of employment for medical physicists.

Medical physicists are concerned with three areas of activity: (1) clinical service and consultation, (2) research and development, and (3) teaching. On the average, their time is divided about equally among these three areas. In clinical service, the physicist may consult with physician colleagues to plan radiation treatment for cancer patients, or to measure radiation output from cancer therapy equipment. Medical physicists in research help develop new treatment techniques and instrumentation. As teachers, they help train physicians, radiographic technologists, and other medical physicists.

■ Job Settings

Hospitals and other medical care facilities, medical schools, universities, and other research institutions

■ Projected Need

The increasing use of physical instruments and techniques in medicine, as well as the increased interest in medical research will serve to spur need for physicists trained in medicine. While employment of general physicists is expected to increase more slowly than average in Illinois through 2010, demand for medical physicists has exceeded supply for many years, according to a University of Chicago health study. Opportunities may be best in large medical centers, many of which already employ a staff of medical physicists.

■ Salaries

According to a 2001 survey conducted by the Health Physics Society, median salary for medical physicists was \$72,500 per year. Minimum wage was \$47,500 and maximum wage was \$170,000 per year.

■ Related Careers

Physician, biomedical engineer, and nuclear medicine technologist

■ Differences in Training

In addition to a basic education in physical science, medical physicists must be familiar with the basic medical sciences such as anatomy, physiology, genetics, and biochemistry. Several universities offer programs in medical physics leading to a master's degree or doctorate. A bachelor's degree in physics is usually required to enter such programs.

There are ten graduate programs in medical physics in the United States and Canada that are accredited by the Commission on Accreditation of Medical Physics Education Programs (CAMPEP).

In addition to academic training, practical experience with medical problems is also essential. This may be acquired through a traineeship or postdoctoral program of one or two years in a hospital.

■ Related Educational Programs

The programs of study listed below are the recommended areas of study to pursue for this occupation. Clicking on these will lead to files that show in-state and national schools that offer these programs.

The following link(s) will take you to CIS for more information. CIS requires an ID and password that can be obtained at <http://cis.ilworkinfo.com/loginhelp/login.asp>

[Health and Medical Physics](#)

■ Credentials

The American Board of Medical Physics offers voluntary certification by exam for eligible candidates.

■ Resources

American Association of Physicists in Medicine
One Physics Ellipse
College Park, MD 20740
Phone: 301.209.3350
<http://www.aapm.org>