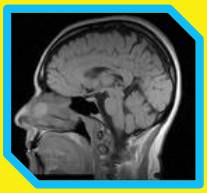
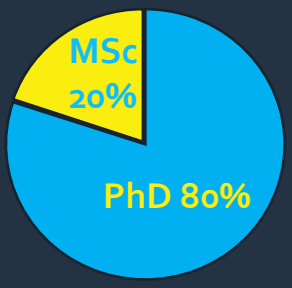


Medical Physicists

Ensuring Albertans receive safe, high quality healthcare

Education

Medical Physicists have ***advanced degrees*** in the physical sciences

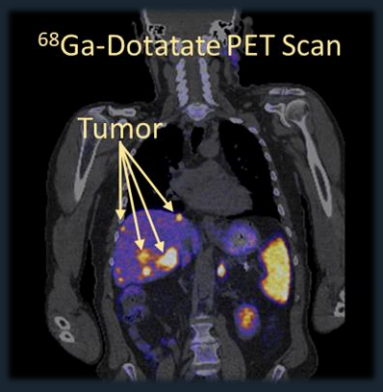


+2 year Medical Physics Residency

CAMPEP-accredited Clinical rosters develop practical skills in clinical problem-solving, technical quality control and management, commissioning new technology, etc.

Nuclear Medicine Physics

- Physics related to nuclear imaging instrumentation
- Dosimetry for radionuclide imaging and therapy
- Experts in radiation safety of unsealed radioisotopes



Radiation Oncology Physics

1 in 2 Albertans will develop cancer

1 in 2 of those will receive radiation

Linear Accelerators

- calibrated to deliver accurate dose
- commissioned & controlled to international standards

Image Guidance

- State-of-the-art technology enabled to target cancer

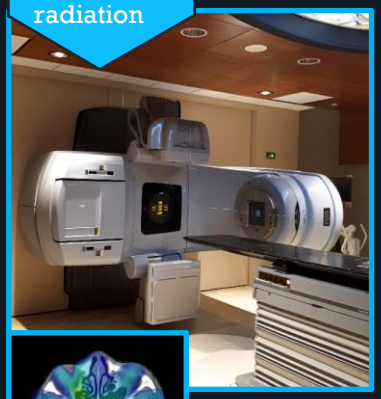
Treatment Planning

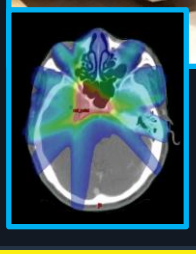
- accurate calculations
- adaptable plans

Brachytherapy

- Single treatment with radio-active seeds performed safely and accurately

Improved Outcomes





Quality & Safety

Diagnostic Imaging Physics

- Optimal image quality on:
  - diagnostic CT
  - radiography
  - fluoroscopy
  - mammography
- Minimize imaging dose
- Acceptance testing
- Radiation safety
- Quality Control Programs

Better Images → Accurate Diagnosis

Association of Medical Physicists in Alberta

Promoting highest quality medical services for patients.

Ensuring cutting edge medical technology is accessible, optimized for quality, and safe for all Albertans.

RESEARCH

Alberta Medical Physicists develop new medical technologies

Linac-MRI units enable unprecedented image guidance in treatment

Breast brachytherapy makes breast cancer treatment more accessible

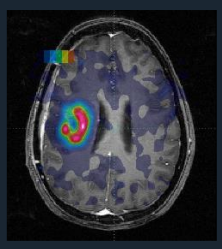
Academics

University of Calgary
Radiation Oncology Physics
MSc, PhD and post PD certificate
RO Physics Residency

University of Alberta
Medical Physics
Msc and PhD
RO Physics Residency
DI Physics Residency
NM Physics Residency

Training the Next Generation

MRI Physics



- Establish Quality Assurance Programs for MRI dealing with
  - Geometric accuracy
  - Artifact suppression
  - Hardware fault detection
- Apply physics principles to establish and verify safety standards
- Work with radiologists and MRI technologists to identify and remedy clinical image artifacts
- Minimize system downtime ; Maximize image potential

Association of Medical Physicists in Alberta (AMPA):

Background:

AMPA was formed in 2009 in response to a growing effort in the global medical physics community to reduce accidents and errors in radiotherapy and medical imaging. Professional regulation was identified as a means to ensure properly trained individuals are hired as medical physicists. We submitted an initial application in 2011 to be regulated under our own college, but it was recommended that we seek a larger existing college to act as our regulating body. Consequently, in 2015 we submitted our latest application in which the CPSA would act as our collective college.

Numbers and Distribution:

There are currently 40-plus medical physicists in AMPA as full members. The bulk of these members work at radiotherapy cancer centres across the province. Other members work in diagnostic imaging and nuclear medicine both within and outside cancer centres. Roughly 90 percent of full members are distributed between Edmonton and Calgary, with the rest employed in Lethbridge, Red Deer, and Grande Prairie.

Training:

Canadian medical physicists are certified nationally through membership with the CCPM (Canadian College of Physicists in Medicine). In general, membership requires:

1. Completion of a graduate degree (MSc or PhD) in medical physics or a related discipline,
2. Completion of a 2-year residency in medical physics accredited by CAMPEP (the Commission on Accreditation of Medical Physics Education Programs, a North-American agency which ensures participating graduate and residency programs meet a minimum standard) and
3. Successful completion of both written and oral examinations administered by the CCPM

Medical physics certification through the ABR (American Board of Radiology) or ABMP (American Board of Medical Physicists) is generally accepted as equivalent to CCPM membership, across Canada.

Role:

Medical physicists specialize in radiation oncology, diagnostic imaging, MRI and/or nuclear medicine physics. Our role is to ensure quality and safety in the delivery of therapeutic and imaging procedures that rely on complex technology. Medical physicists design and administer quality control and management programs, develop technical and clinical protocols, commission new equipment, develop new technologies and collaborate with other disciplines to bring them into clinical practice, and play an integral role consulting on challenging patient cases and providing scientific expertise. Most medical physicists in Alberta also hold academic appointments with the University of Alberta or the University of Calgary, and have additional teaching and research responsibilities. Our research covers a wide array of topics but broadly employs technological advancements and innovation to improve care within a variety of treatment and imaging modalities.

Rationale for Regulation:

The professional regulation of medical physicists in Alberta will ensure a minimum standard of training and practice for medical physicists practicing within the province, regardless of their employer, be it a public health authority or the private sector. It will also ensure that all practicing medical physicists maintain competency through regular renewal of their certification, for which continuing education is a requirement. Maintenance of skills provides more than just a safe clinical environment; it also paves the way for establishing the new techniques and treatments for the betterment of Alberta patients.

Professional regulation will also provide more accountability and oversight of Medical Physicists practicing in Alberta by a college of peers, and ultimately to government, and provides a means of dealing with cases of unsafe practice should they arise.

The lack of regulation in medical physics is a potential issue of public safety should standards of training and clinical competency not be met. Currently there is no government regulation of medical physics practice in Canada, although medical physicists in both Ontario and BC are also in the process of pursuing this with their respective governments. We look forward to partnering with Alberta to take the first step towards regulation of this profession.