



Medical Physics

in

UBC Physics and

Astronomy



Medical Physics

- Medical Physics operates at the interface of physics and medicine.
- The two largest applications are radiation therapy and imaging.
- An MSc is generally considered a minimum qualification for obtaining a job in this field.



Medical Physics at UBC

- We have a CAMPEP Accredited Medical Physics Graduate Program here at UBC – one of 9 in Canada and 43 in North America.
- Our Medical Physics graduate student population is currently 27 students.(18 in imaging and 9 in radiotherapy)



UBC Graduate MSc Program

Radiation Therapy Stream - courses

- PHYS 500 Quantum Mechanics
- PHYS 534 Radiotherapy Physics
- PHYS 536 Radiation Biophysics
- PHYS 539 Radiation Dosimetry
- PHYS 540 Image Reconstruction
- PHYS 545 Anatomy, Physiology and Statistics for Medical Physicists
- **PHYS 535 Radiotherapy Physics II**
- PHYS 549 Thesis
- **Clinical Experience in Radiation Therapy**
- Graduate Medical Physics Seminar



UBC Graduate MSc Program

Imaging Stream - courses

- PHYS 500 Quantum Mechanics
- PHYS 534 Radiotherapy Physics
- PHYS 536 Radiation Biophysics
- PHYS 539 Radiation Dosimetry
- PHYS 540 Image Reconstruction
- PHYS 545 Anatomy, Physiology and Statistics for Medical Physicists
- One of:
 - PHYS 541 (elective) Nuclear Medicine
 - PHYS 542 (elective) Magnetic Resonance Imaging
 - PHYS 543 (elective) Biomedical Optics
- PHYS 549 Thesis
- Clinical Experience in Diagnostic Imaging
- Graduate Medical Physics Seminar



Research in Medical Physics

- Radiation Therapy (Bergman, Duzenli, Lee, Popescu, Ramansehan, Spadinger)
- Imaging
 - Biomedical Optics (MacAulay, Zeng)
 - Micro-CT (Ford)
 - MRI (Kozlowski, Laule, MacKay, Rauscher, Reinsberg, Xiang)
 - PET (Bryman, Sossi)
 - SPECT (Celler)



Radiotherapy

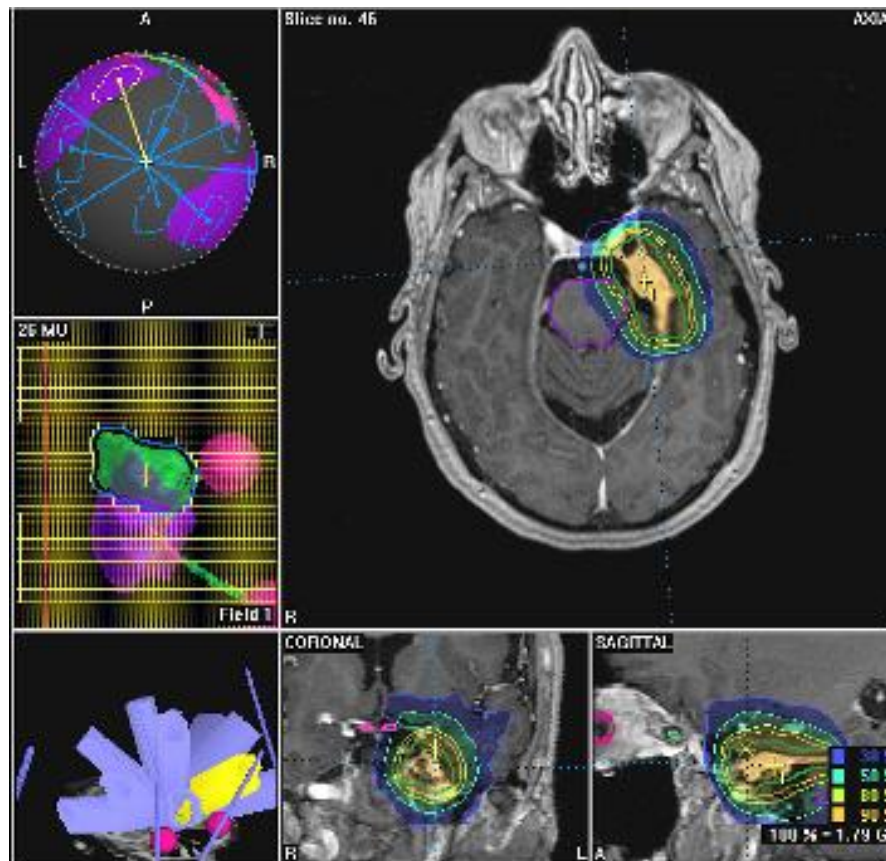
(BC Cancer Agency)



Cheryl
Duzenli



Tony
Popescu



Alanagh Bergman



Ingrid Spadinger

(Bergman, Duzenli, Lee, Popescu, Ramansehan, Spadinger)



Biomedical Optics

(BC Cancer Research Centre)



Calum MacAulay



Haishan Zeng

(MacAulay, Zeng)



Micro CT –Scanning

(Centre for High-Throughput Phenogenomics)



Nancy Ford



(Ford)

Magnetic Resonance Imaging



Piotr Kozlowski



Cornelia Laule



Alex MacKay



Alex Rauscher



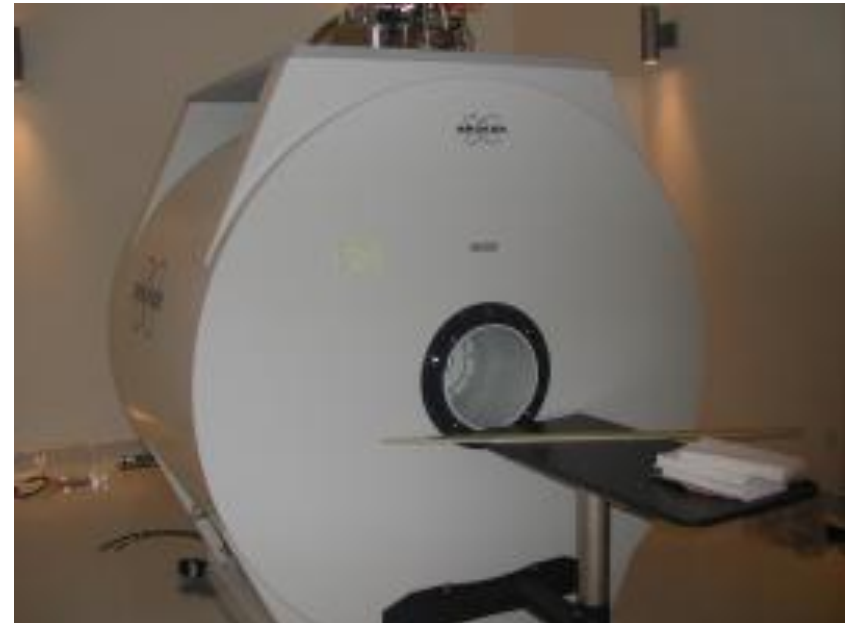
Stefan Reinsberg



Qing-San Xiang



3.0 Tesla MRI scanner (Human)



7.0 Tesla MRI scanner (Animal)



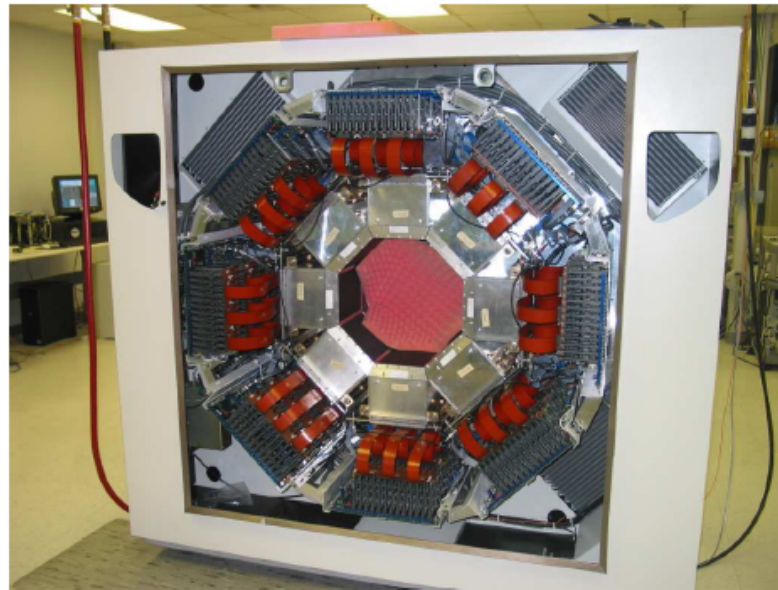
Positron Emission Tomography (PET)



Vesna Sossi

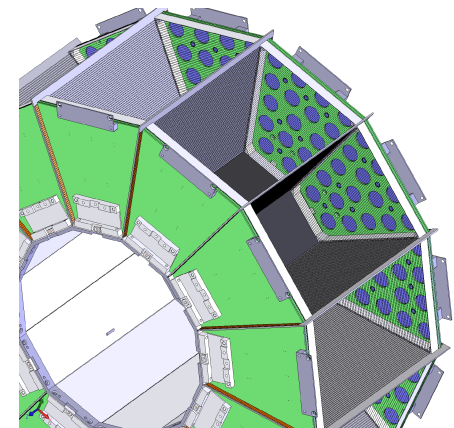


Doug Bryman



High Resolution Research Tomograph

UBC Hospital



Liquid Xenon Detector in planning stage

Single Photon Emission Computed Tomography (SPECT)



Anna Celler

