



# Hello, I'm a...

## Postdoc

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Matthew Strugari, PhD

Postdoctoral Researcher

Instituto de Física Corpuscular (CSIC–UV)

Supervisors: Gabriela Llosá and Irene Torres

Newcomers Fest 2024

November 25, 2024

# From undergrad to postdoc...

University of Regina, Canada



BSc in Honours Physics, 2017

Matthew Strugari

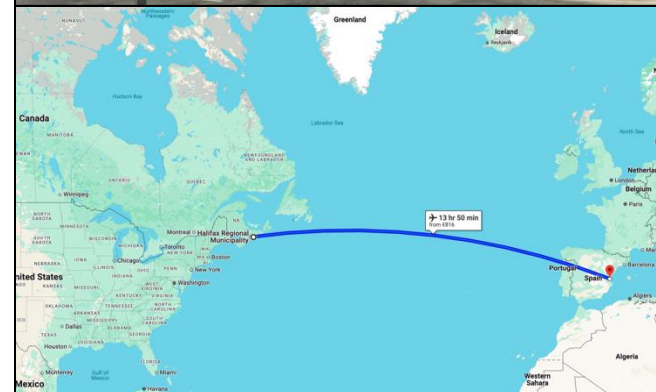
Dalhousie University, Canada



PhD in Medical Physics, 2024

IFIC Newcomers Fest 2024

Instituto de Física Corpuscular, Spain

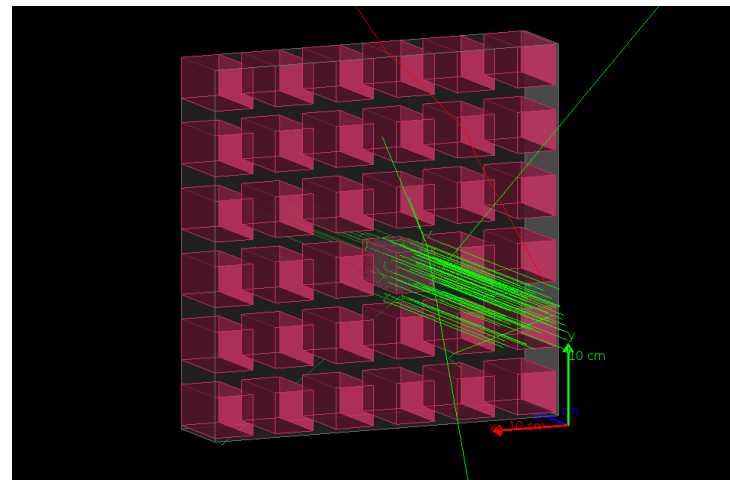
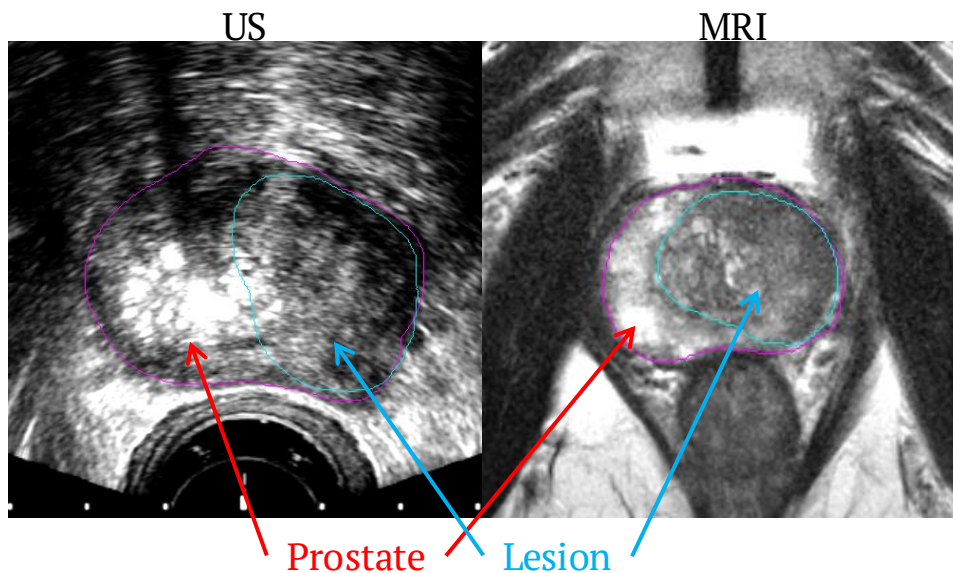


Postdoctoral Researcher

# My research has been focused in medical physics

University of Regina:

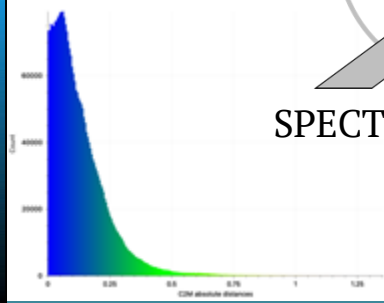
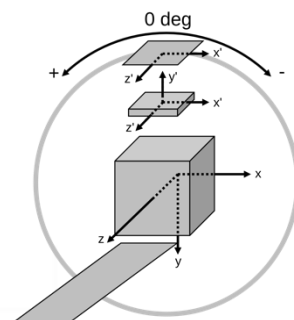
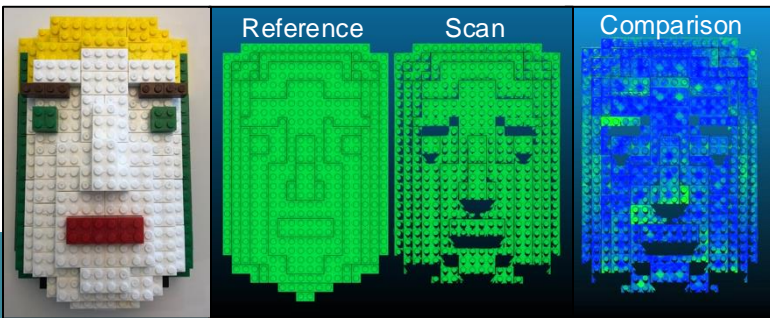
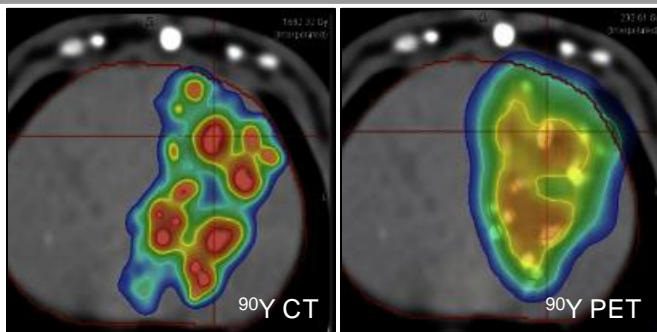
- **Deformable image registration** for integration of MR imaging into HDR brachytherapy
- Design optimization of high quantum efficiency **MV X-ray detectors**



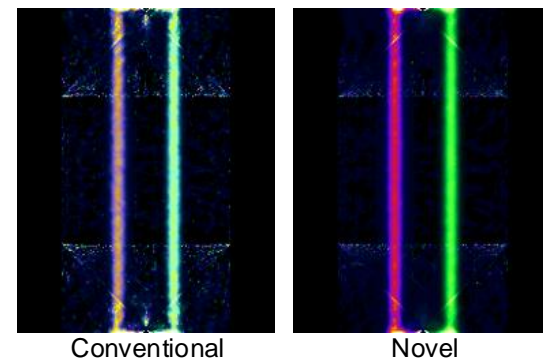
# My research has been focused in medical physics

## Dalhousie University:

- High-precision dosimetry in  $^{90}\text{Y}$  radioembolization through CT imaging
- **3D scanning** for head and neck **patient immobilization**
- Integration of **pinhole-SPECT modelling in STIR** ← licensed to UCL
- Development of simultaneous **multi-radionuclide SPECT imaging**



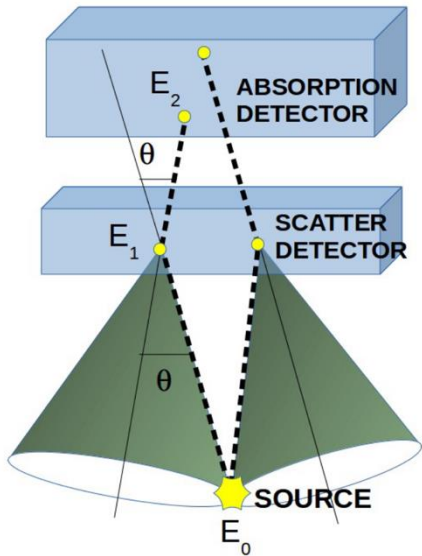
Crosstalk correction using  $^{99\text{m}}\text{Tc}/^{123}\text{I}$



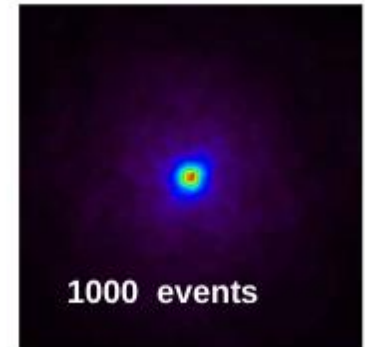
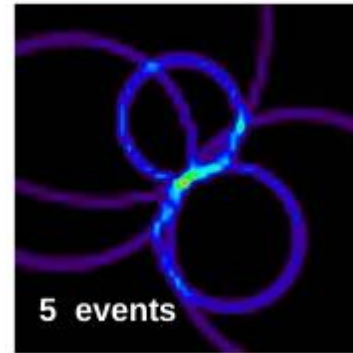
# Now: Radiotherapy assessment with MACACO III+

Treatment verification in  
**targeted radionuclide therapy using  $\alpha$ -emitters**

Exploit **Compton scattering kinematics**  
to detect and reconstruct radionuclide distribution  
using a Compton camera



$$\cos\theta = 1 - \frac{m_e c^2 E_1}{E_0(E_0 - E_1)}$$



# Outside of my research, I'm a...

Percussionist & recording artist



Amateur astronomer



Recreational athlete



# Thank you

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