

Particles that Cure

Learn about how radiation and
accelerator physics are used to treat
cancer!

For ages 8-15: August 8th 2026 at BC
Cancer - Victoria

Goals for outreach program

1. Reduce stigma surrounding radiation and promote how it can be used safely and effectively to treat patients.
2. Encourage volunteers (medical physics graduate students) to develop scientific communication and outreach skills.

Program Structure

- Single-day event (August 8th)
- School-aged children (ages 8-15) will visit the cancer centre accompanied by their parents for 2-3 hours
- We will be hosting 4 stations that the children will cycle through in groups of 6-8. Each activity will be 30-45mins long.
 - EBRT
 - Brachytherapy/Radiation Safety
 - CT
 - Accelerators
- Each activity is being designed and hosted by a team of 3-4 graduate students
- Additional volunteer support for the day-of will be provided by UVIC science rendezvous team

Activities: EBRT

Goals:

- Explain how treatment planning is performed
- Highlight the importance of covering the tumour and avoiding organs-at-risk (OARs)

Project:

- Opaque 3D tumour model with an attached OAR
- Children will be given a flashlight
- Each child will create a cardboard cutout to shape each beam (collimation)
- Challenge to maximize light on the tumour while minimizing light on the OAR



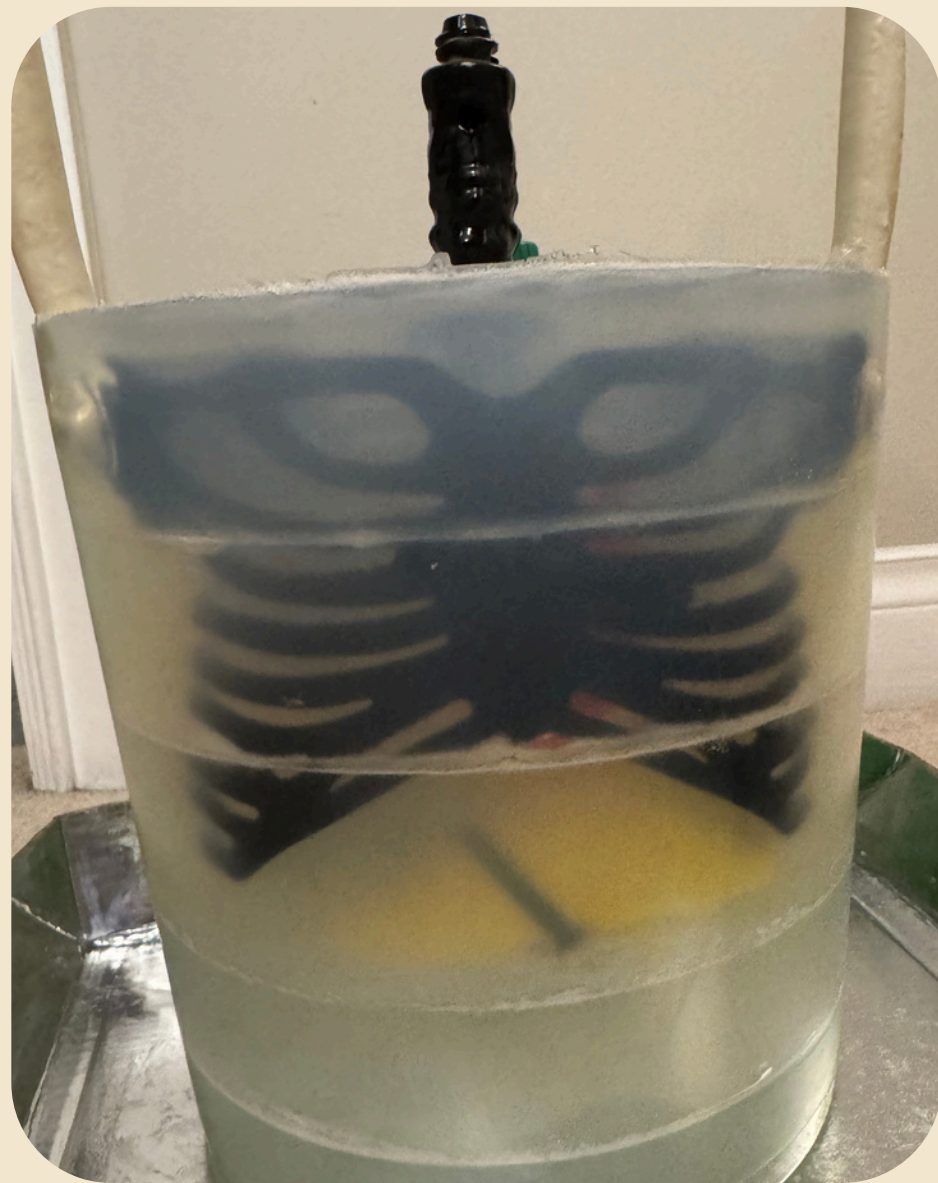
Model of OARs (tumour to be added)

Activities: Brachy/Radiation Safety

Goals:

- Demonstrate how a brachytherapy treatment works
- Highlight radiation safety concepts (time, distance, shielding)

Current progress: prototyping the abdominal phantom made out of melt-and-pour soap

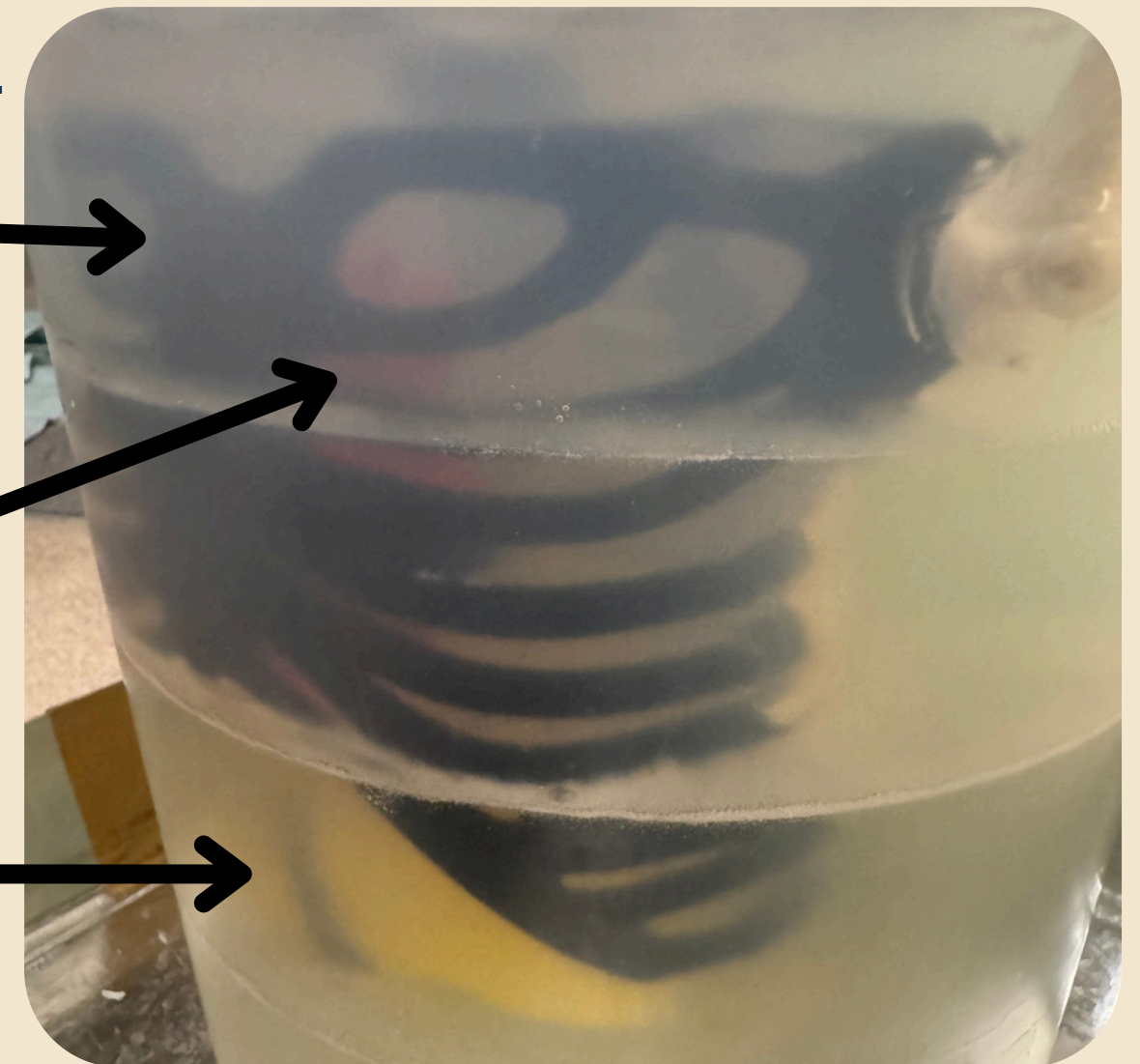


Visible organs

Bones →

Heart →

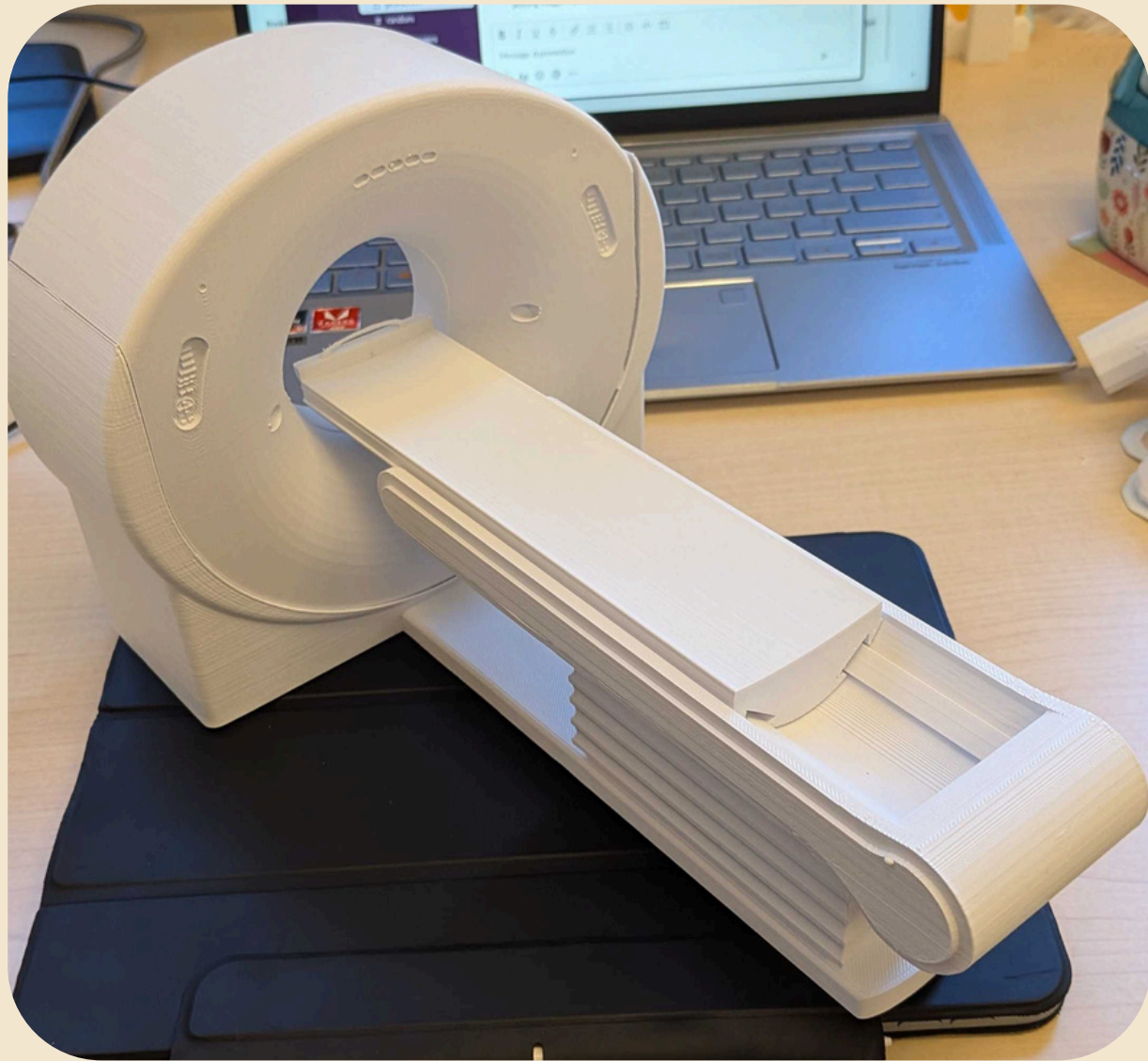
Liver →



Activities: CT

Goals:

- Explain how a CT scanner works
- Have students guess and “reconstruct” objects based on scans of various objects
- Compare different imaging modalities: CT, CBCT, X-ray radiography, & MRI



3D printed model of a CT scanner featuring a slideable couch

Various objects will be scanned, namely fruit and farm animal figurines



Activities: Accelerators

Goals:

- Demonstrate how an accelerator works and how it is applied in radiotherapy

Primary Activity:

- Using a slingshot where pulling back farther represents increasing particle energy.
- Marking different pull-back distances to “discrete energies”, so they can choose and test low vs high energy launches.
- Introduce a target tumour. Place targets at different “depths” so they must match the right energy to hit them.



Early photos of slingshot testing

Update on promotion & budget

Promotion:


- Recently started promoting
 - Emailing schools
 - Social media
 - BC Cancer employee newsletter
 - Poster hanging across Victoria
- Currently have 14 children signed up (aiming for 50-80)
- Will soon promote through the Science Bureau's network

Budget and materials:

- Projected to meet budget, spare funds will be put towards snacks and refreshments for the day
- Confirmed availability of BC Cancer "swag" to give out

FREE SCIENCE EVENT:
Particles that Cure
August 8th, 2026

Join us for a **science outreach event** designed for youth aged 8-15.

 Learn about how radiation and physics are used to treat cancer!

2 hours of fun, hands-on activities

Located at BC Cancer-Victoria

All are welcome - no science background necessary

Register here: 

 Particles that Cure  particles.that.cure