

Proton Beam Therapy

Cancer Treatment and its value to the Community



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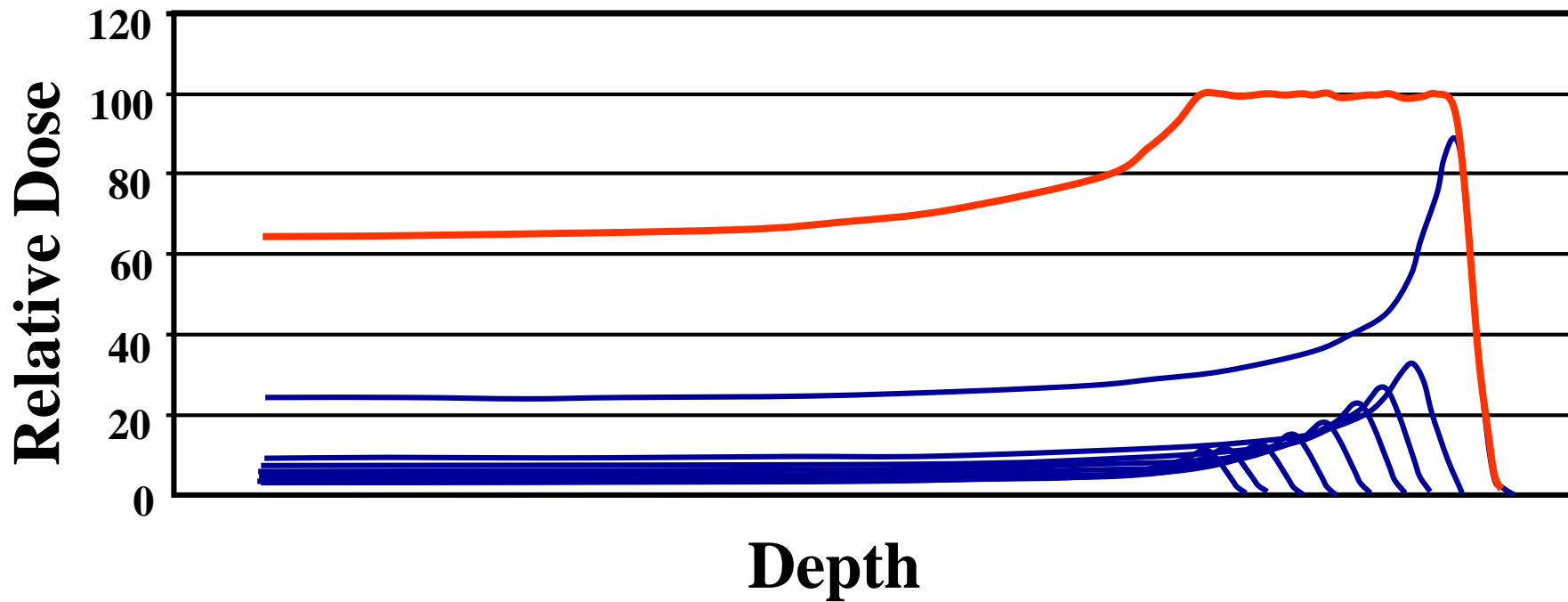
Rochester, MN, USA



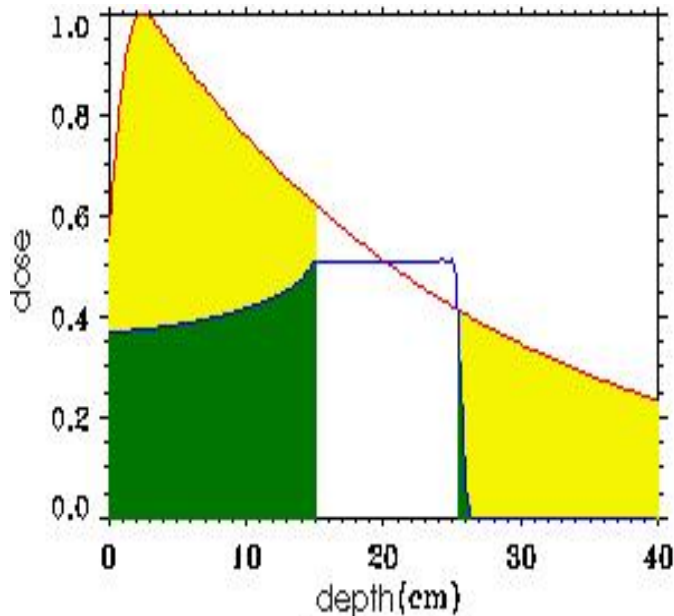
Outline

- **Some Very Basics**
- **Clinical Advantages**
- **Implementation Complexities**
- **Integrated Team**
- **Summary**

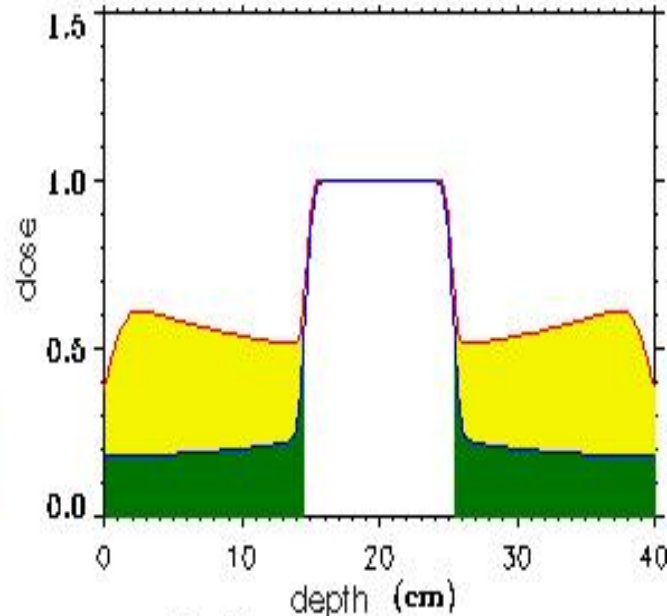
Basics of Proton Therapy: Spread out Bragg Peak



Advantages Protons vs. Photons



1 field



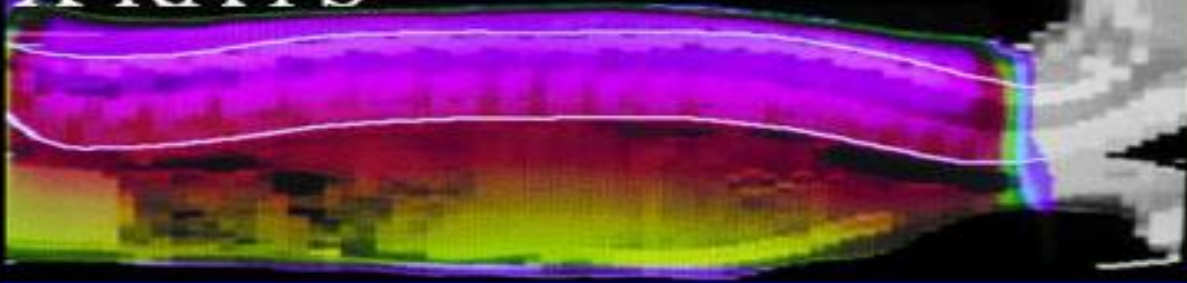
4 fields

protons

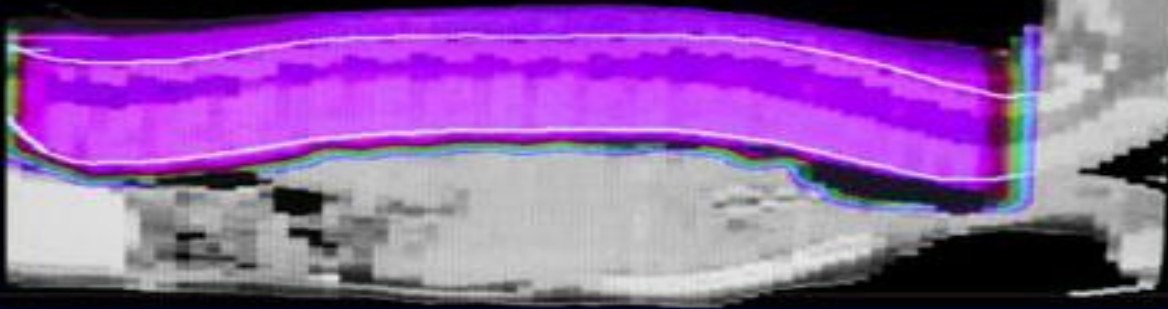
photons

MEDULLOBLASTOMA

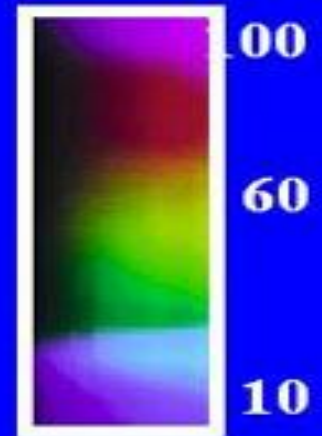
X-RAYS



PROTONS

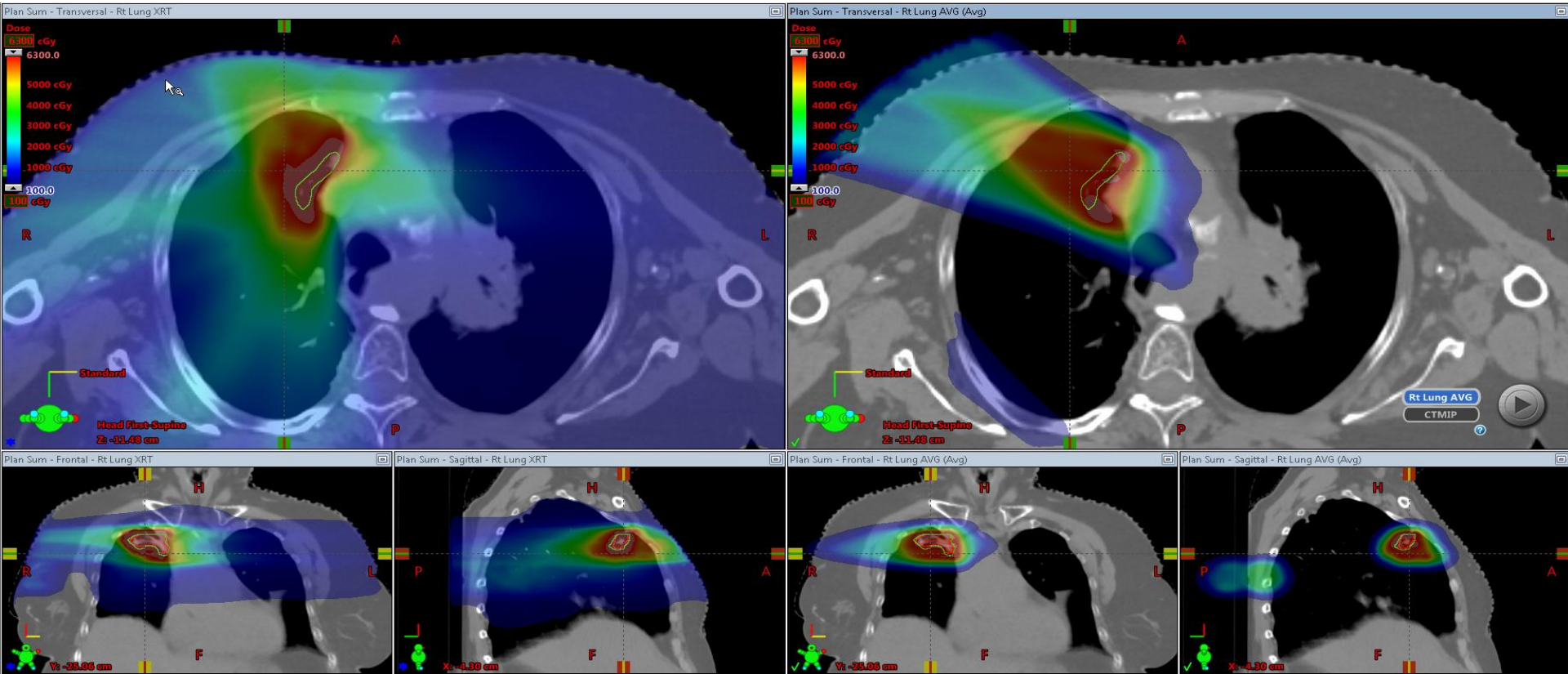


Clinical Advantages

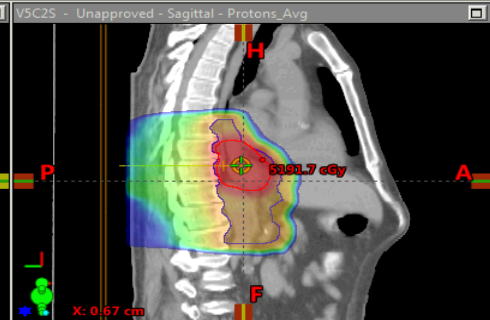
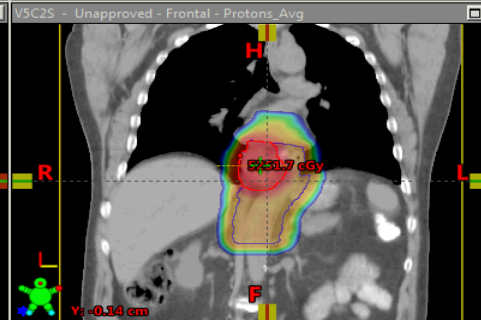
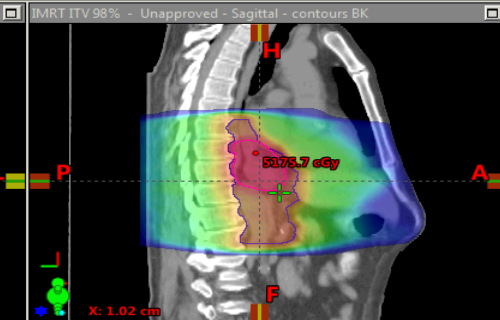
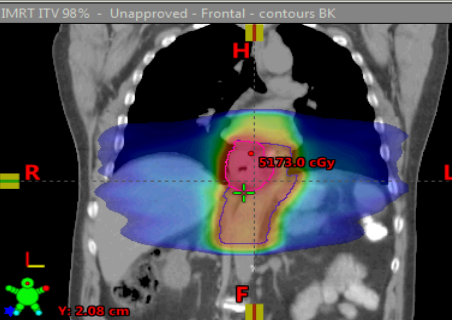
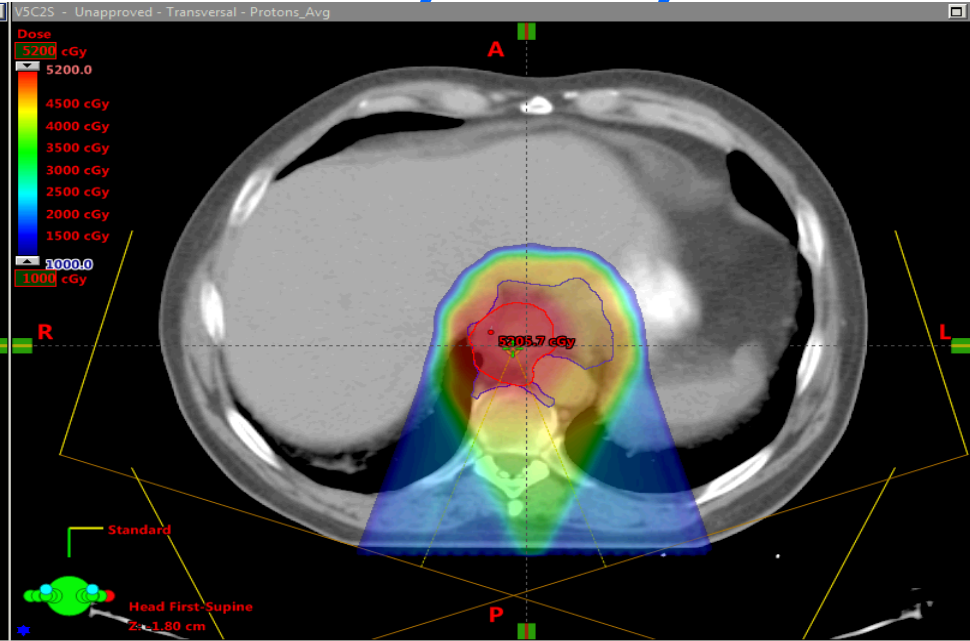
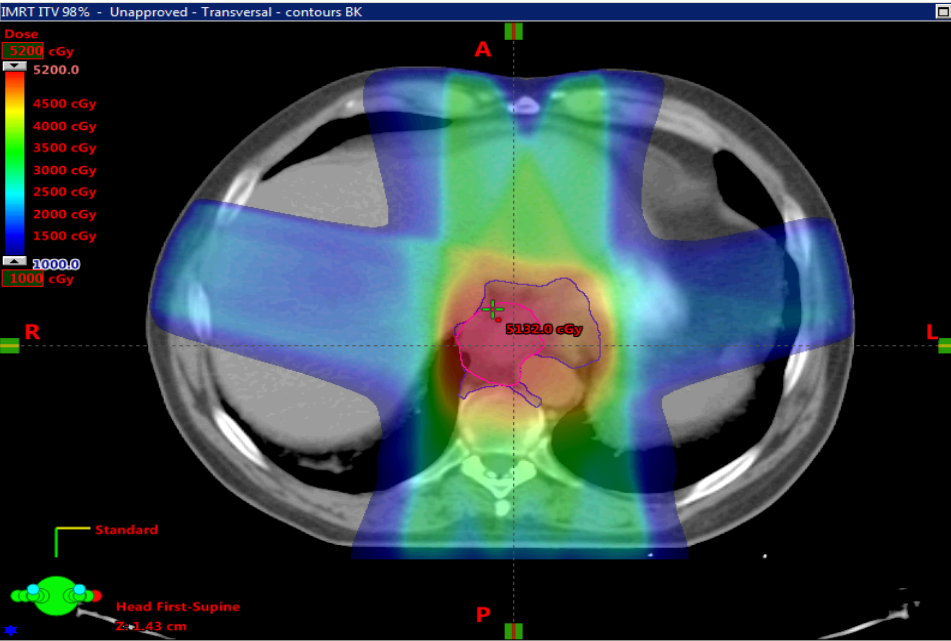


Colorwash from 1 Gy to 63 Gy

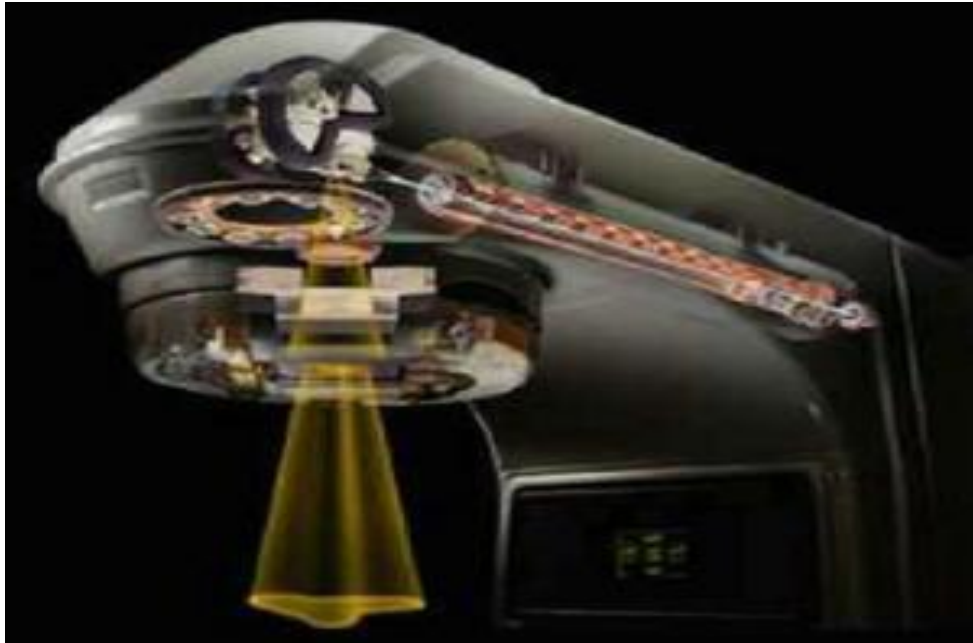
(1 Gy = ~100 CT scans = ~1000 Chest X-rays)



Colorwash is from 10 Gy to 52 Gy

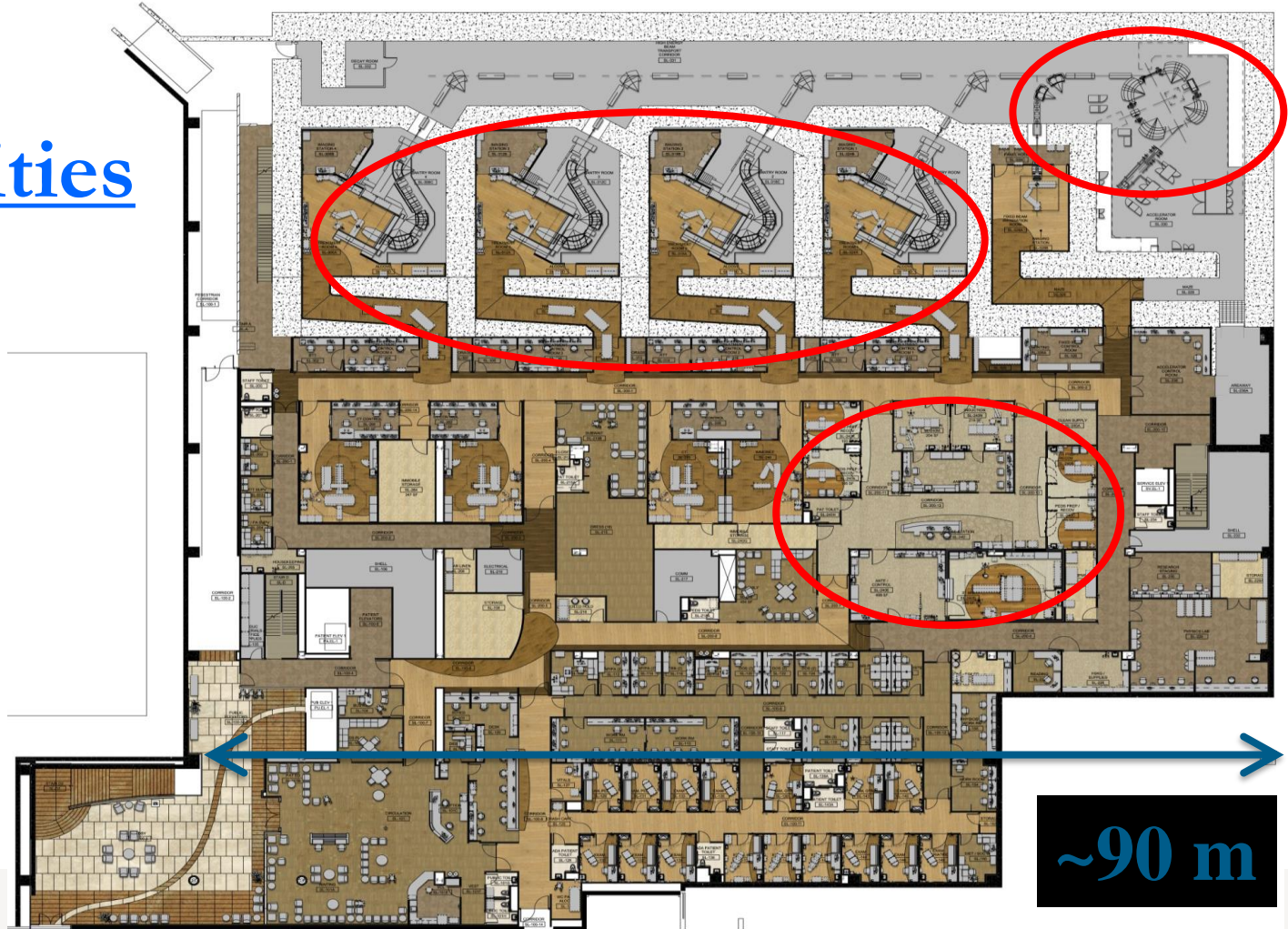


Conventional RT Machine



Complexities

- 1) Novelty
- 2) Enormity



Subway Level Floor Plan

~90 m

10/15/2011

Ox Blue™
Construction Camera Service





05/03/2012

Richard O. Jacobson Building

Ox Blue
Construcción Camera Service

5/8/2012

08/30/2012

OxBlue™
Construction Camera Service

10/08/2012

Installation began 6/3/2013



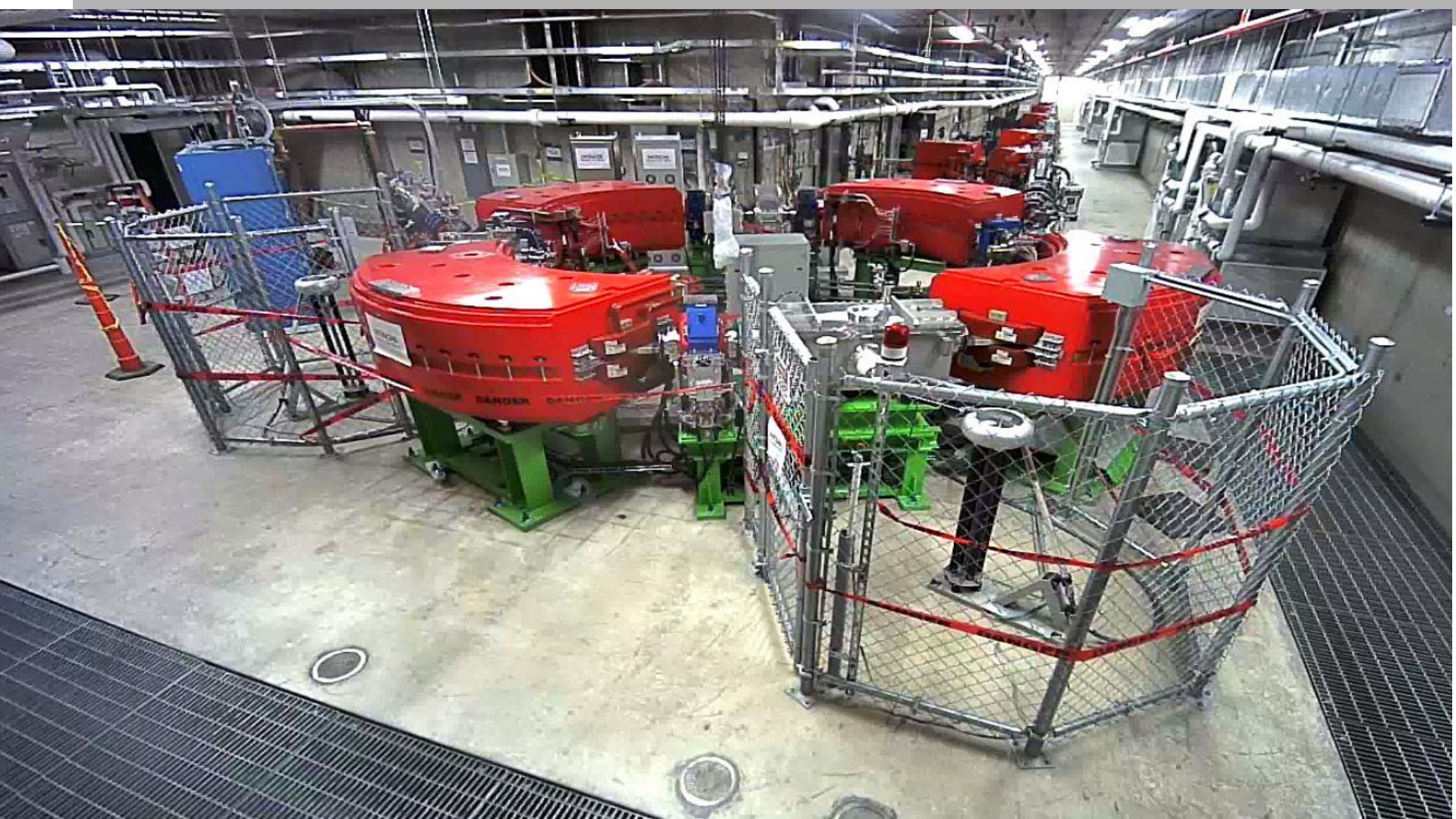
HITACHI
Inspire the Next

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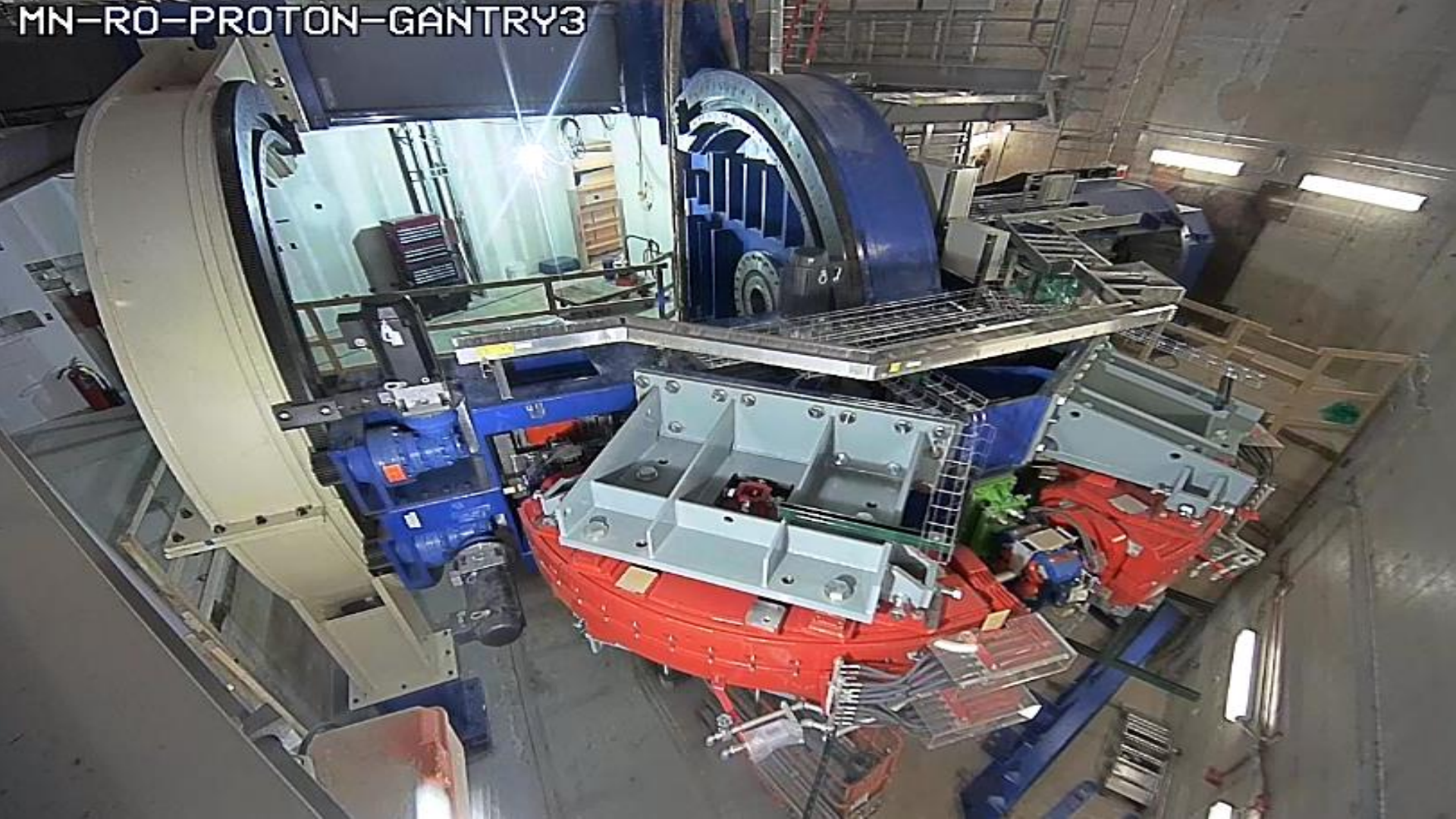
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DANGER DANGER





MN-RO-PROTON-GANTRY3



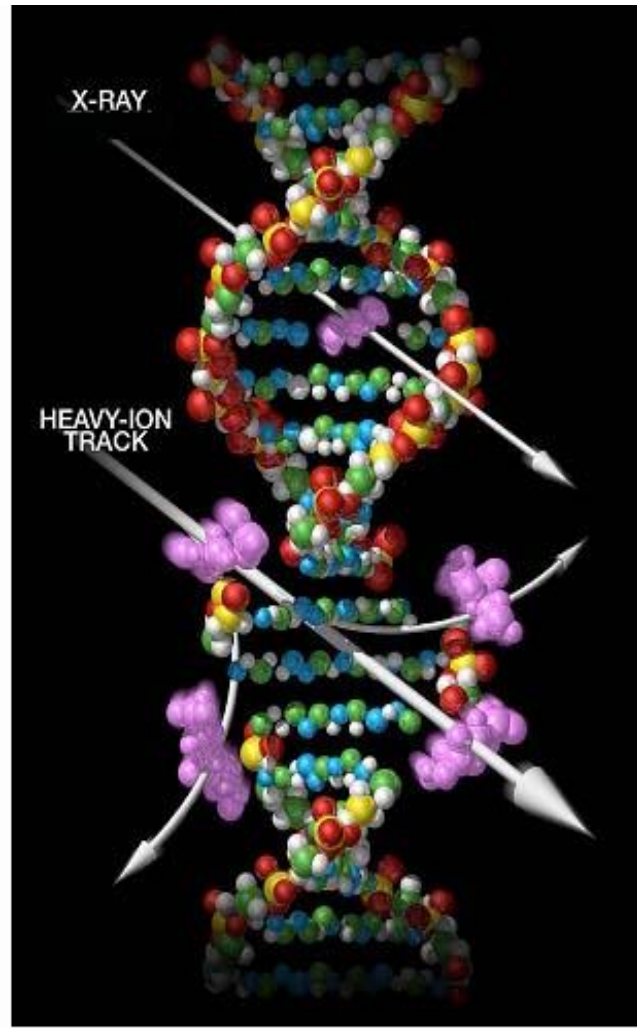
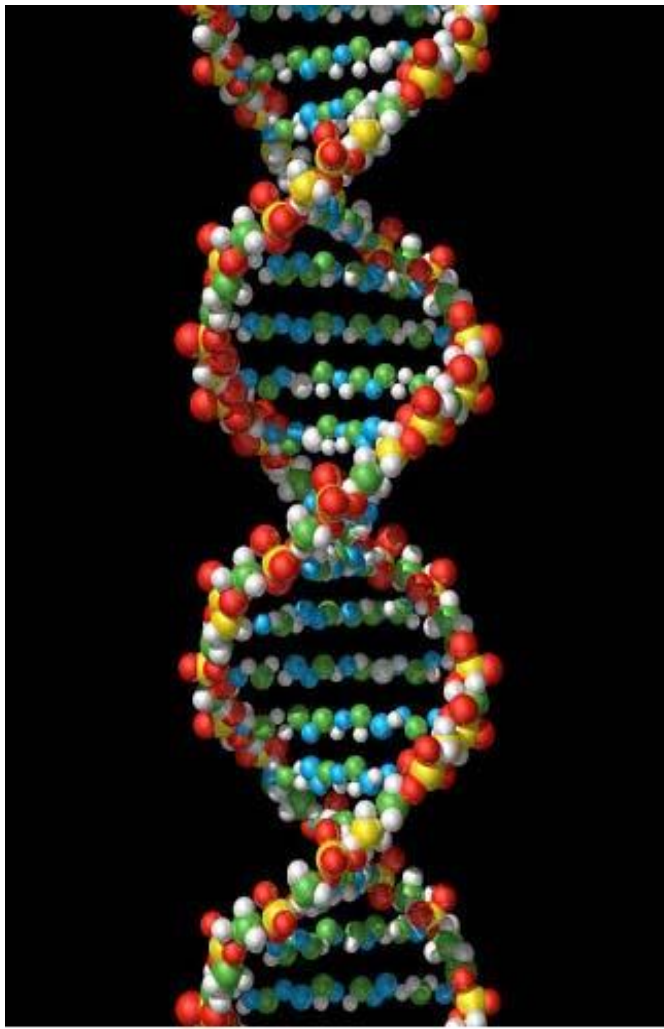




RICHARD O. JACOBSON BUILDING

Complexities

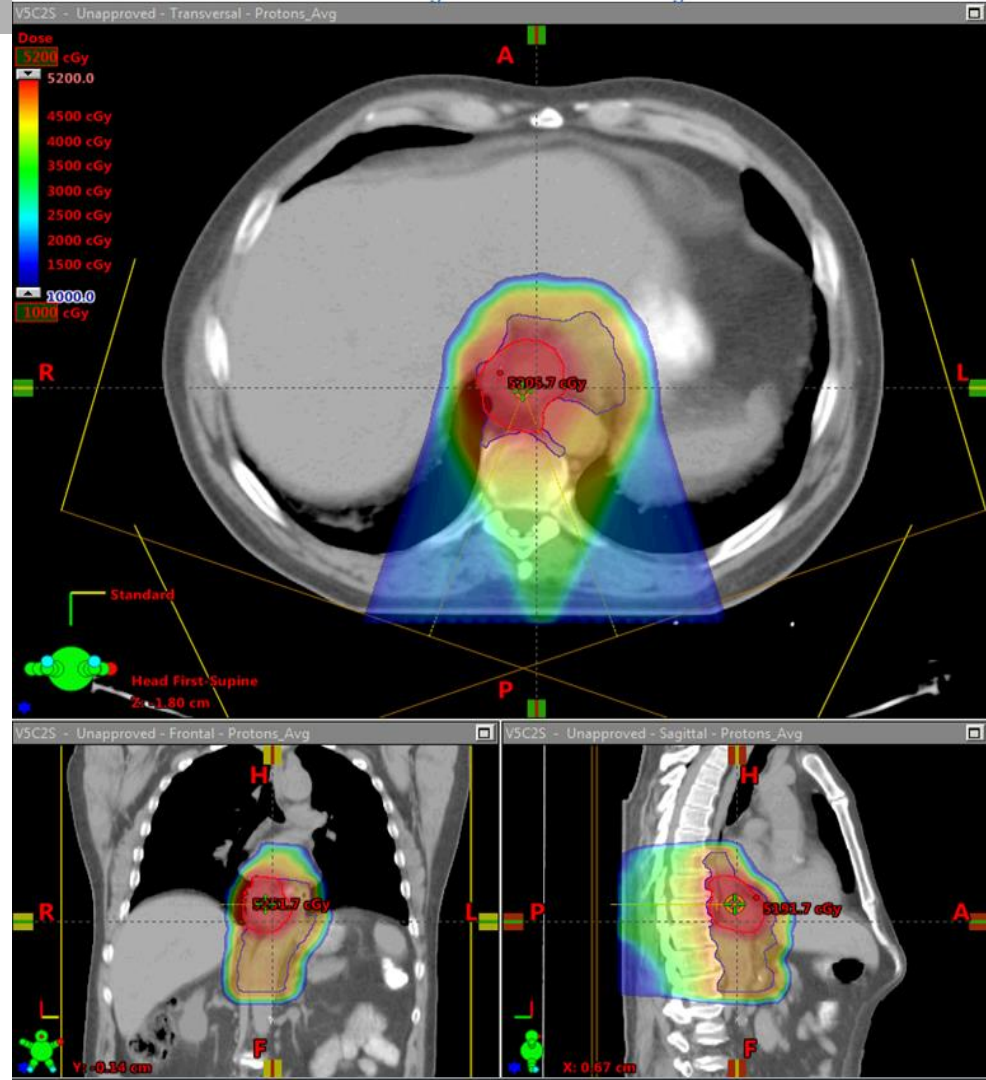
3) Radiobiology



Complexities

4) Commissioning

5) Identifying Limitations



Integrated Team

- **TEAM**
 - **Physicians, Physicists, Therapists, Dosimetrists, Administrators, and the Vendor**
- Physicists and the Vendor need good and open communication
- Physicians and Administrators need education and to create the referral base
- Therapist and Dosimetrists need training and have input on the HMI

Thank You for your Time

