



# Overview of a University and Affiliated Hospital Radiation Safety Program

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# Agenda

- Georgia Regents University.
- Georgia Regents Health System.
- Radioactive materials/radiation – GRU.
- Radioactive materials/radiation – GRHS.
- State regulations and licensing.
- Institution roles and responsibilities.
- Organization of the Radiation Safety Office.
- Typical radiation safety tasks – university.
- Typical radiation safety tasks – health system.
- Challenges and current issues.



# Georgia Regents University

A little math...

Georgia Health Sciences University

+ Augusta State University

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= Georgia Regents University



# Georgia Regents University

- 9000 students
- 523 medical and dental residents
- 1570 full and part time faculty
- 110 degree programs in 9 colleges
  - Medical College of Georgia (852 medical students)
  - College of Dental Medicine (311 dental students)
  - School of Nursing (587 nursing students)
  - Undergraduate - Summerville
- \$75M/y sponsored research



# Georgia Regents Health System

A little more math...

Georgia Regents Medical Center (478 beds)

+ Children's Hospital of Georgia (154 beds)

+ Regional Trauma Center

+ Georgia Regents Medical Associates

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= Georgia Regents Health System

**GRHealth**

GEORGIA REGENTS HEALTH SYSTEM

# Georgia Regents Enterprise



- Shared senior management.
- 9950 employees.
- 150 buildings.
- 650 acres.
- Valued at \$1 billion.

# Georgia Regents University

- 107 Principal Authorized Users (research)

- Using

–  $^3\text{H}$

–  $^{14}\text{C}$

–  $^{35}\text{S}$

–  $^{32}\text{P}$

–  $^{125}\text{I}$



# Georgia Regents University

- Two research irradiators.
- Lots of smaller sources.
- Two Dual Energy X-ray Absorptiometers (DEXA).
- 95 dental x-ray systems.





# Georgia Regents Health System

- Nuclear Medicine
  - Diagnostic (primarily  $^{99m}\text{Tc}$ )
  - Therapeutic (primarily  $^{131}\text{I}$ )
  - PET/CT ( $^{18}\text{F}$ )
- Gamma Knife
  - 5000 Ci  $^{60}\text{Co}$
- Georgia Radiation Therapy Center
  - $^{137}\text{Cs}$  sources for low dose rate brachytherapy
  - $^{192}\text{Ir}$  High Dose Rate Afterloader (10 Ci)



# Additional Responsibilities

- University Hospital
  - Therapy in-patients –  $^{131}\text{I}$ ,  $^{137}\text{Cs}$
- Georgia Correctional Health Care
  - 44 dental and diagnostic x-ray systems



# Regulatory Framework



# Framework

- Regulatory
  - Radioactive Materials: GA 391-3-17
  - X-rays: GA 290-5-22
  - Security: Nuclear Regulatory Commission (10 CFR 37)
- Non-regulatory
  - Joint Commission
  - Research sponsors



# Internal Framework



Radiation Safety Committee

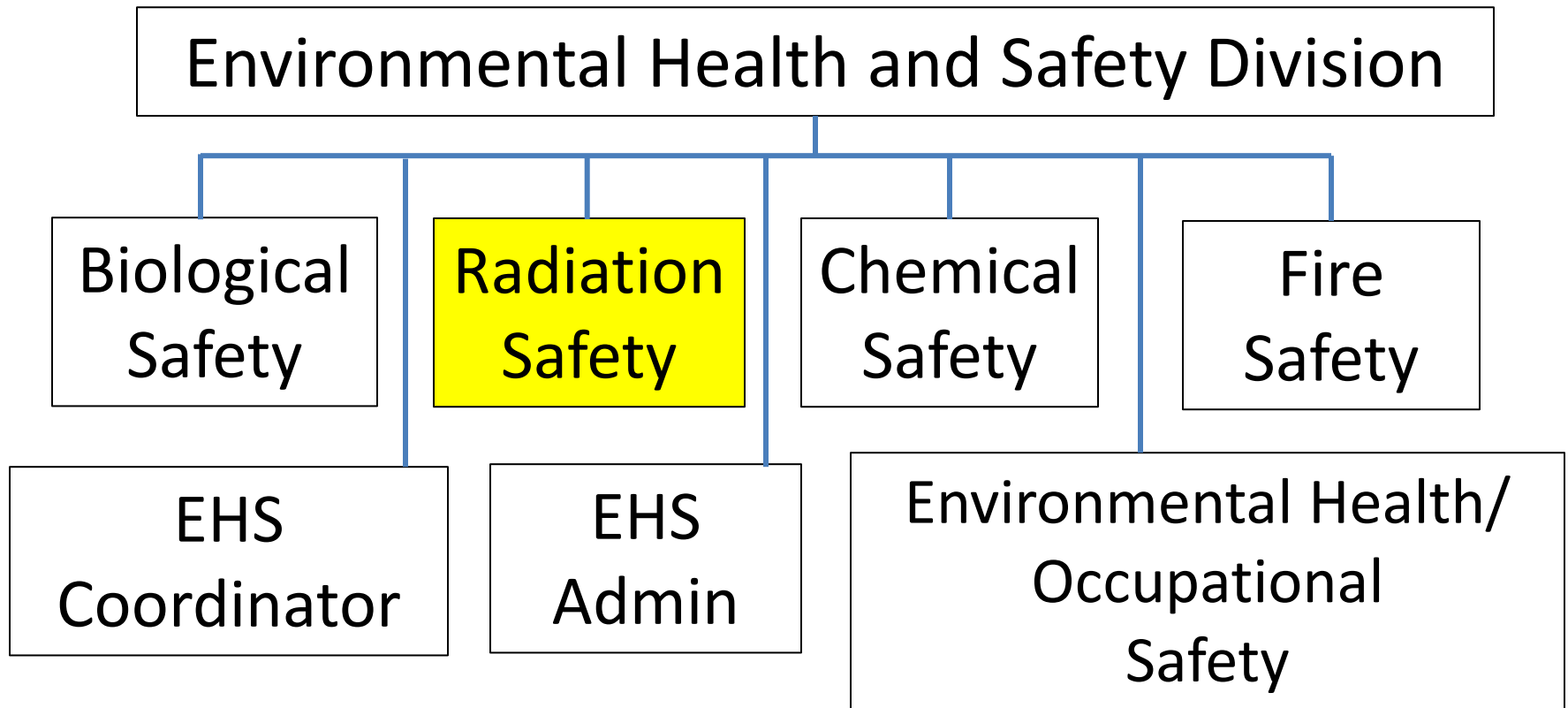


Radiation Safety Officer and Staff

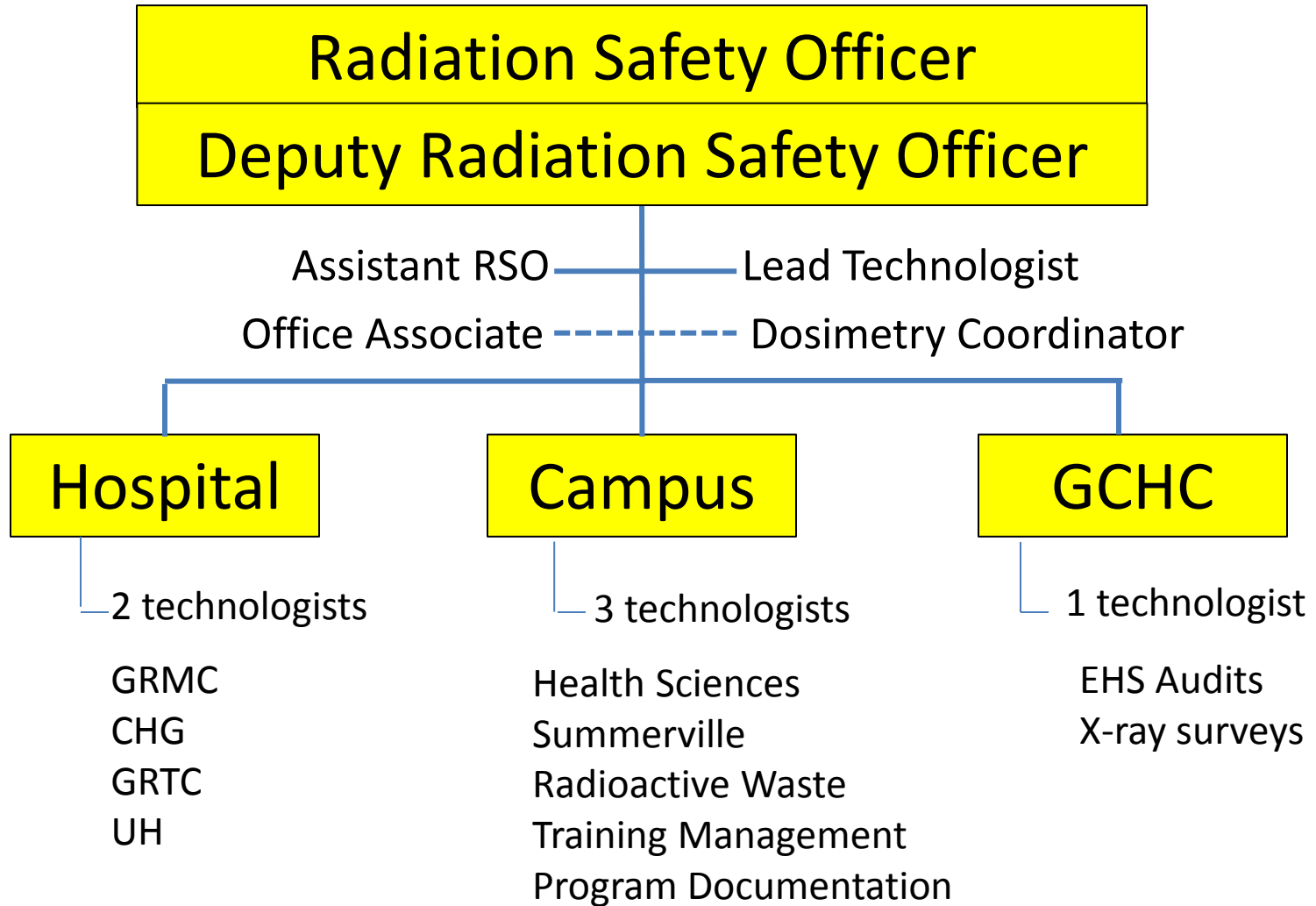


Authorized Users of Radioactive Material

# Organization



# Organization



# Funding

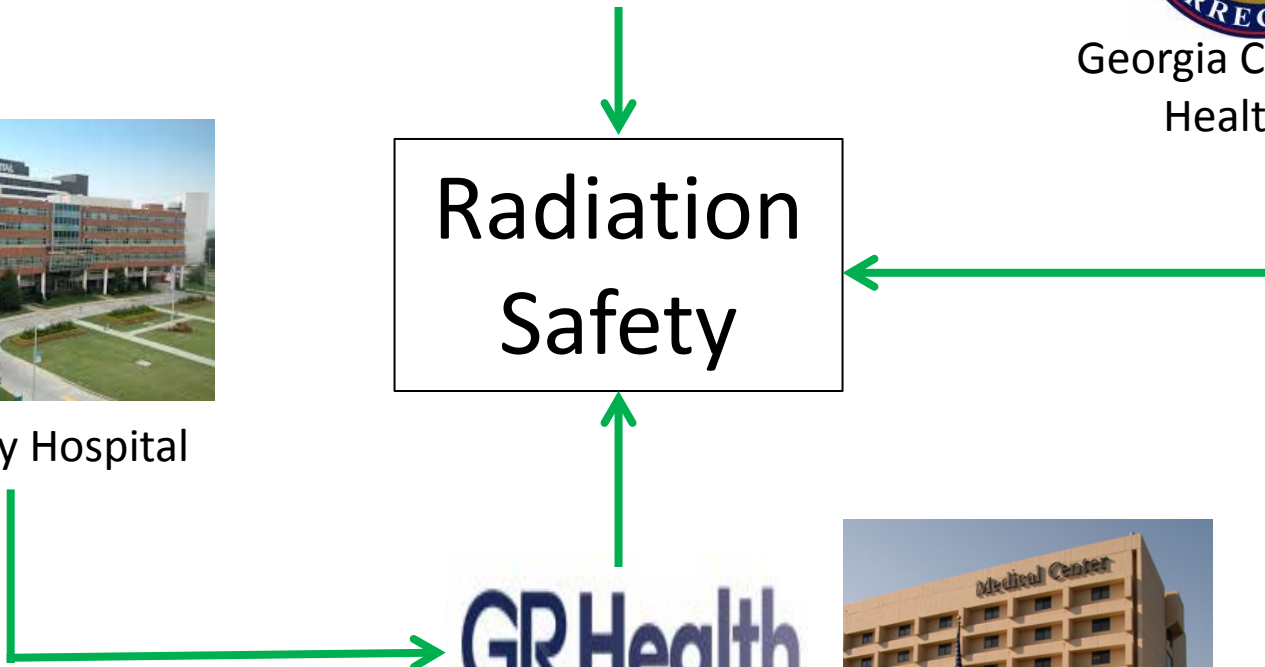


Georgia Correctional  
Health Care



University Hospital

Radiation  
Safety





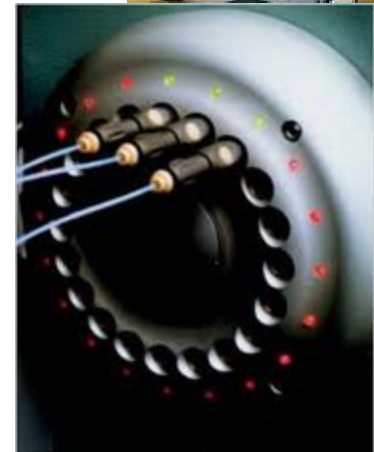
# Typical Radiation Safety Tasks - GRU

- Radiation/contamination surveys.
- Radiation safety training.
- Personnel dosimetry.
- Radioactive waste management.
- Package receipts.
- Radiation Safety Committee.
- X-ray system surveys.
- Research protocol review.



# Typical Radiation Safety Tasks - GRMC

- Radiation/contamination surveys.
- Radiation safety training.
- Personnel dosimetry.
- Radioactive waste management.
- Package receipts.
- Radiation Safety Committee.
- Research protocol review.



# Inpatient Radiation Therapy



# $^{131}\text{I}$ Thyroid Ablation

- Room preparation.
- Patient monitoring and release.
- Patient counseling.
- Room decontamination/release.



# Inpatient Brachytherapy

- Sealed  $^{137}\text{Cs}$  sources.
- Source transport and accountability.
- Room survey.
- Patient surveys and release.



# Increased Controls

## 10 CFR 37

- Sources of concern.
- Enhanced security.
- Trustworthy and Reliable.
  - Fingerprinting.
  - FBI background check.
  - References.
  - Approvals.



# Radiation Safety Program Challenges

- Budget ↓ Workload ↑
- University environment.
- Health care environment.



# Current Issues

- Smart Compliance.
- Technology.
- Laser Safety Program.





## In Summary

- Who we are.
- How we are regulated.
- How we are organized and funded.
- Our radiation sources and uses.
- What we do.
- Our challenges and issues.





Questions?