Radiation Protection Program Scope

- Maryland: Agreement State
- Regulator: Maryland Department of the Environment (MDE)
- University has 3 Licenses with the State of Maryland
  1. Broadscope Materials License MD-33-004-01
     - Radioactive material use in research (C-14, H-3, P-32, I-125, Fe-55 Uranium-238, Thorium-232, Ni-63 GC/ECD, Various Sealed Sources)
  2. Special Nuclear Materials License MD-33-004-02
     - 2 Plutonium-239/Beryllium Sources at Maryland University Training Reactor (MUTR)
  3. Irradiator License MD-33-004-03
     - Panoramic Co-60 Irradiator (underwater storage of sealed sources)
- Radiation Producing Machines
  - ~33 Registered machines with MDE
- MUTR
  - NRC Licensed to Engineering
  - UMD Radiation Safety Staff Support MUTR
    - Health Physics Program, License Support
    - NRC Inspection of Health Physics Program Every 2 years
Licensed Facilities Under UMD Control
MD-33-004-01 Locations Of Use (College Park, IBBR Rockville & 3 UMCES Locations)
Radioactive Material Use

- ~35 Principle Investigators
  - CBMG, Chemistry, Vet Med, Physics, IBBR, UMCES, Animal Science, Plant Science/Landscape Architecture
- ~100 Authorized Labs
- RSO Quarterly Lab Audits
  - Compliance Good
  - Violation Policy Est. 2009
- ~120 Packages Received Annually
- ~60 Individuals Trained Annually
- Dosimetry & Environmental Monitoring (process 2500 badges/year)
- Perform Survey Meter Calibrations
- Sealed Source Inventory & Leak Tests (semi-annual)
- ALL Research protocols reviewed by RSO and Approved by RSC
- Track & Oversee Radioactive Material from Receipt to Disposal
Radiation Producing Devices

- Manage 33 Machine X-ray Units
  - Research, Enclosed/Cabinet Types, Medical, Human Use/Diagnostic, Linear Accelerator
- Conduct Annual Surveys & Audits
- One Staff Health Physicist is a State Certified Inspector
  - Conduct State Inspections
  - Medical Physicist, Contractor, State Licensed Inspector (Health Center & Athletics)
  - Train 80 X-ray users each year
Maryland University Training Reactor

- Support Reactor Director
- RSO on Reactor Safety Committee, Director on campus RSC
- Health Physics Program Implementation
- Reactor Air & Water Monthly Surveillances
- Surveys & Occupational and Public Dose Assessments
- Review Protocols
- Support Re-Licensing HP questions
- Dosimetry & Area Monitoring
- Meter Calibrations
UMD Training Reactor
Gamma Irradiator
Linear Accelerator
Key: Location of Monitors in relation to MUTR

#2 - 308 m NE of the MUTR
#3 - 1.1 km SW of the MUTR
#4 - 758 m NW of the MUTR
#5 - 387 m SE of the MUTR
#6 - North side of MUTR (fence line)
#7 - East, adjacent to MUTR building and directly adjacent to Irradiator
#8 - West, adjacent to MUTR
#9 - 590 m South of the MUTR
#10 - 950 m West of the MUTR
#11 - South Courtyard Adjacent to MUTR
#12 - 248 m NW of the MUTR
#13 - External to MUTR on the North side of the Rollup Door
#14 - External to MUTR on the South side of the Lower Entrance
The Koeth Collection
Alan Jacobson, Manager of Radiation Safety
University of Maryland
captal@umd.edu