Radiation Protection at Los Alamos National Laboratory
Scope of Health Physics

- In the World
- In DOE
- At LANL
  - Occupational / Worker
  - Environment / Public
  - Decon & Decommissioning / Environmental Restoration
  - Facility Safety
  - Safeguards / Security
  - Global Threat Reduction
  - Emergency Response
  - Waste
Occupational Radiation Protection at LANL

- 250 facilities with radiological activities
- Nuclides from tritium, to activation products, to fission products, to uranium, to plutonium & beyond
- Sealed sources to kg quantities of special nuclear material
- X-ray machines to half-mile linear accelerator
- Diversity of radiological work
  - R&D with entire chart of the nuclides
  - Radiochemistry, metallurgy, material sciences
  - Weapons science & manufacturing
  - Nuclear physics research
  - Biomedical research and medical isotope production
  - Nonproliferation, counterterrorism, homeland security
  - Nuclear fuels and heat sources
  - Dynamic testing
LANL RP Functions

- Core
  - Dosimetry (internal & external)
  - Instrumentation
  - Analysis Labs
  - Records/Reports

- Centralized
  - Rad Engineering
  - Procedures & Training
  - RSS/RGD

- Deployed
  - HPs, supervisors, technicians
  - Operational health physics: on-the-floor hazard analysis & control
  - Emergency response, RPP implementation, facility operability, program support
Challenges in Occupational Radiation Protection

- Enabling the unique work of the Laboratory while maintaining regulatory compliance and worker safety
- Maintaining capabilities, facilities, experts to support vast diversity of LANL radiological operations
- Managing risks, given multiple drivers
  - Programmatic work and facility needs
  - Stakeholders (customers, regulators, your boss, workers, yourself)
  - Real hazards vs. perceived risk
  - Competing hazards in R&D / industrial setting
  - ALARA - everyone’s definition is different
  - Must maintain communication and team-building skills
- LANL maintains RP Program responsive to these needs
- Health Physics – at a place like LANL, one can find career-long interest, challenge, and reward
LANL RP Rewards

- Technical challenges for the health physicist
- Hugely diverse radiological issues & opportunities
- Serious radiological hazards and real-world problems
- Opportunities to drive state-of-the-art health physics solutions
- Collaboration and camaraderie among staff (RP & LANL-wide)
- Long term LANL missions involving radiological work
- Demand for HP resources
- Good employer
- Great location
- Fabulous weather
- Excellent managers