

Medical Effects of Ionizing Radiation Course
Armed Forces Radiobiology Research Institute

FY17 Day 1

0730-0800 Administrative Processing

Sign-in, Receive Handouts and Turning Point Remotes

0800-0820 Introduction

Introduction of the Mobile Training Team, AFRRRI's radiological program and a brief overview of the MEIR course.

0820-0900 Global Radiological and Nuclear Threats to U.S. Security

Discussion of the current status of global radiological and nuclear threats to the U.S.

0900-0910 Break

0910-1000 Physical Principles of Ionizing Radiation

Delve into the process by which radiation interacts with matter.

1000-1010 Break

0110-1100 Health Physics Equations

Instructor led practice performing fundamental calculations relating to radiation protection.

1100-1200 Lunch

1200-1250 Biological Principles of Ionizing Radiation

Analyze the process by which radiation affects biological systems.

1250-1300 Break

1300-1350 Acute Radiation Syndrome

Discuss the effects of an acute, high dose radiation exposure to the whole body.

1350-1400 Break

1400-1450 Radiological/Nuclear Weapons and Effects

Detailed discussion of radiological/nuclear weapons and their effects when employed on a population.

1450-1520 Radiation Dosimetry

Review the methods and instrumentation used to determine the radiation dose a person has received.

1520-1530 Break 10

1530-1615 Radiation Squares Game (Part 1)

Team trivia competition that covers the first day's lectures

TURN IN REMOTES

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FY17 Day 2

0745-0800 Review, Sign-in and Turning Point Remote Issue

0800-0900 Medical Management of Radiation Injury

Explanation of ARS phases, diagnostics, and confounders for persons exposed to radiation.

0900-0910 Break

0910-0940 Radiological Exposure Assessment Tools

Demonstration of the FRAT and BAT programs.

0940-0950 Break

0950-1050 Late Effects of Ionizing Radiation

The delayed health effects from long-term, low-level, and chronic high-dose sub-lethal exposures of ionizing radiation.

1050-1200 Lunch

1200-1300 Operational Management of Radiation Incidents

Current regulations, actions and recommendations for public health protection and operational planning. Contamination/decontamination demonstration.

1300-1310 Break

1310-1400 Introduction to RADIAC Equipment

RADIAC operation and hands-on practice.

1400-1410 Break

1410-1500 Management of Internal Contamination

Discuss the pathophysiology of internal radionuclide contamination and identify assessment methods and treatments of internal contamination for specific radionuclides.

1500-1545 Radiation Squares Game (Part 2)

Team trivia competition that covers the second day's lectures.

1545-1630 Team Table-Top Scenarios

Propose solutions to real-world scenarios and utilize the information to give advice on radiological triage and protection.

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FY17 Day 3

0745-0800 Review, Sign-in and Turning Point Remote Issue

0800-0900 Radiation Accident Experiences Part 1

Discussion of historical incidences where people have been exposed to acute or chronic radiation.

0900-0910 Break

0910-1010 Radiation Accident Experiences Part 2

Discussion of historical incidences where people have been exposed to acute or chronic radiation.

1010-1020 Break

1020-1100 Psychological Factors of Incident Response

Psychological reactions of populations who are exposed to the effects of a nuclear detonation, and both real and perceived widespread radionuclide contamination.

1100-1130 Final Exam (Multiple Choice)

1130-1230 Lunch

1230-1250 Film and Open Discussion

CDC "Radiological Terrorism" Clinician's Training Film (<http://www.bt.cdc.gov/radiation/justintime.asp>)

1250-1320 Radiation Incident Response

Identify which agencies would respond to a "worst-case" radiological incident and what the response structure would look like.

1320-1330 Break

1330-1430 Table-Top Scenario Presentations

Groups present their solutions to the scenarios and utilize the information to give advice on radiological triage and protection.

1430-1500 Closing Comments & Test Review

TURN IN REMOTES

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Instructor Credentials

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LTC, MC, USA

Aerospace / Occ Medicine
Chief, Military Medical
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Thomas Costeira

CPT, MS, USA

M.S. Medical Health
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Radiation Oncologist MEIR
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Sidney Hinds

COL, MC, USA

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Charles "Bob" Woodruff

LCDR, MSC, USN (RET)

B.S. Biology
Health Physicist

William Skinner

Lt Col, MC, USAF

Radiation Oncologist
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Daniel Flynn

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Radiation Oncologist
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Steven Barnes

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Havilah Gates

CPT, MS, USA

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