



**Medical Effects of Ionizing Radiation Course
Armed Forces Radiobiology Research Institute**

Standard 2.5-day MEIR

[location]

[dates]



| [date] (day 1) | | Min. | Instructor |
|----------------|--|------|------------|
| 0750–0800 | Administrative processing, remote pick-up and sign-out, distribute course materials | 10 | Staff |
| 0800–0830 | Introduction Discuss AFRRRI’s radiological program, provide a brief overview of MEIR course, pretest (Turning Point™). | 30 | Staff |
| 0830–0840 | Break | 10 | |
| 0840–0940 | Physical Principles of Ionizing Radiation Describe the process by which radiation interacts with matter. | 60 | Staff |
| 0940–0950 | Break | 10 | |
| 0950–1050 | Biological Principles of Ionizing Radiation Describe the process by which radiation affects biological systems. | 60 | Staff |
| 1050–1100 | Break | 10 | |
| 1100–1200 | Radiological/Nuclear Weapons and Effects Explain possible sources and threats of rad/nuc weapons, as well as their effects. | 60 | Staff |
| 1200–1300 | Lunch | 60 | |
| 1300–1400 | Management of Internal Contamination List the methods for removal of internally deposited radioactive materials in the body. | 60 | Staff |
| 1400–1410 | Break | 10 | |
| 1410–1510 | Late Effects of Ionizing Radiation Explain long-term, low-level, and chronic high-dose sub-lethal exposures of ionizing radiation. | 60 | Staff |
| 1510–1520 | Break | 10 | |
| 1520–1620 | Radiation Squares Game Demonstrate comprehension of material and state correct answers to questions on course material. | 60 | Staff |
| | Turn in remotes | | |



**Medical Effects of Ionizing Radiation Course
Armed Forces Radiobiology Research Institute**

Standard 2.5-day MEIR

[location]

[dates]



| [date] (day 2) | Min. | Instructors |
|--|------|-------------|
| 0750–0800 | 10 | |
| Pick up remotes, sign in | | |
| 0800–0900 | 60 | Staff |
| Acute Radiation Syndrome and Trauma I | | |
| Recall the underlying causes of radiation sickness. Explain the treatments available for persons affected by radiation sickness and treatments being developed. | | |
| 0900–0910 | 10 | |
| Break | | |
| 0910–1010 | 60 | Staff |
| Acute Radiation Syndrome and Trauma II | | |
| Continuation of Acute Radiation Syndrome and Trauma from previous lecture. | | |
| 1010–1020 | 10 | |
| Break | | |
| 1020–1120 | 60 | Staff |
| Radiation Accident Experiences | | |
| Discuss the effects of high levels of radiation exposure, both locally and systemically, in radiation accident victims. | | |
| 1120–1130 | 10 | |
| Break | | |
| 1130–1200 | 30 | Staff |
| Protective Action Guides | | |
| Explain actions/advice for public health protection and dose minimization. | | |
| 1200–1300 | 60 | |
| Lunch | | |
| 1300–1400 | 60 | Staff |
| Psychological Factors | | |
| Describe psychological reactions of populations who are exposed to the effects of a nuclear detonation, and both real and perceived widespread radionuclide contamination. | | |
| 1400–1410 | 10 | |
| Break | | |
| 1410–1510 | 60 | Staff |
| Radiation Squares Game | | |
| Demonstrate comprehension of material and state correct answers to questions on course material. | | |
| 1510–1520 | 10 | |
| Break | | |
| 1520–1620 | 60 | All |
| Preparation Time for Group Tabletop Exercise Scenarios | | |
| Propose solutions to real-world scenarios and apply the information to advise on radiological triage and protection. | | |
| Turn in remotes | | |



**Medical Effects of Ionizing Radiation Course
Armed Forces Radiobiology Research Institute**

Standard 2.5-day MEIR

[location]

[dates]



| [date] (day 3) | Min. | Instructors |
|--|------|-------------|
| 0750-0800 Sign in, pick up remotes | 10 | |
| 0800-0830 Online Radiation Resources and the Biodosimetry Assessment Tool (BAT) & First-Responder Radiological Assessment Triage (FRAT) Explain how the BAT and FRAT software programs can provide diagnostic information on radiation casualties. | 30 | Staff |
| 0830-0900 Introduction to Radiac Equipment Describe fundamental radiac operations and conduct hands-on surveys to identify sources. | 30 | Staff |
| 0900-0910 Break | 10 | |
| 0910-1010 Radiation Incident Response Identify which agencies would respond to a radiological incident. Describe the agencies that responded during the 2011 nuclear incident in Japan. | 60 | Staff |
| 1010-1020 Break | 10 | |
| 1020-1120 Group Tabletop Scenario-Driven Exercise Propose solutions to real-world scenarios and apply information to advise on radiological triage and protection. | 60 | All |
| 1120-1150 Film and Open Discussion Show CDC "Radiological Terrorism" Clinician's Training Film. (http://www.bt.cdc.gov/radiation/justintime.asp) | 30 | All |
| 1150-1205 Post-Course Exam (Turning Point™) Turn in remotes | 15 | All |

Instructor Credentials

Anthony Mickelson
COL, MC, USA
Head, Military Medical Operations Dept., AFRRRI

Charles 'Bob' Woodruff,
LCDR, MSC, USN (Ret.)
BS, Biology Health Physicist

Brian E. Livingston
Capt, BSC, USAF
MSPH, Health Physicist