Monday, June 18

09:00-10:30  Course orientation and icebreaker, group photo

10:30-11:00  Break

11:00-12:00  Department Presentation
Ms. Susan Pepper, Chair, Nonproliferation and National Security Department, Brookhaven National Laboratory (BNL)

12:00-13:00  Lunch

13:00-14:30  Fundamentals of Nuclear Technologies
An overview of the nuclear fuel cycle, nuclear energy, and nuclear weapons.
Mr. Luis Ocampo Giraldo, Scientific Associate, Detector R&D, BNL

14:30-15:00  Break

15:00-17:00  A Brief History of the IAEA
A description of some of the essential early legal frameworks and proposals that led to the creation of the IAEA and nuclear safeguards-relevant international law
Dr. Barclay Ward, Professor, The University of the South

Tuesday, June 19

09:00-12:00  RADWORKER Training
Mr. Jay Adams, BNL

12:00-13:00  Lunch

13:00-14:30  Evolution of the IAEA Safeguards System
This presentation covers strengthening measures implemented by the IAEA since traditional safeguards began and includes the Model Additional Protocol, integrated safeguards, and an introduction to the state-level concept.
Ms. Katherine Bachner, Group Leader, Nonproliferation Policy and Implementation, Brookhaven National Laboratory (BNL)

14:30-15:00  Break

15:00-17:00  Nuclear Test Bans – History and Safeguards Relevance
Since the dawn of the nuclear age, limitations on nuclear tests have been proposed in various forms throughout the world. This lecture reviews the history of nuclear testing, the safeguards implications of test bans, and the future of the CTBT.
Mr. Les Paldy, Distinguished Service Professor, Stony Brook University
Wednesday, June 20

09:00-10:15  State Level Concept Implementation
This lecture offers a detailed explanation of the state-level concept (SLC), evaluation of state-specific factors, and SLC implementation as practiced by the IAEA.
Ms. Jill Cooley, Senior Technical Consultant, Y12 National Security Complex

10:15-10:30  Break

10:30-11:45  Acquisition Pathway Analysis
Ms. Jill Cooley, Senior Technical Consultant, Y12 National Security Complex

12:00-13:00  Lunch

13:00-14:00  Safeguards Scenario
An exercise in safeguards implementation

14:00-15:30  The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)
The NPT is the cornerstone of the nonproliferation regime. Effective safeguards are considered to be one of the most important tools the international community has to prevent the proliferation of nuclear weapons. This presentation will provide a comprehensive overview of how the NPT creates the necessary conditions for safeguards effectiveness.
Ambassador Susan Burk, U.S. Department of State (retired), BNL Consultant

15:30-15:45  Break

15:45-17:00  NPT Scenario
An exercise in NPT negotiations
Ambassador Susan Burk, U.S. Department of State (retired), BNL Consultant

Thursday, June 21

09:00-10:30  The United States Support Program to IAEA Safeguards
Dr. Peter Sprunger, Physical Scientist, U.S. Department of State

10:30-10:45  Break

10:45-12:00  Implementation of Safeguards in the US
Dr. Hector Rodriguez-Luccioni, International Safeguards Analyst, U.S. Nuclear Regulatory Commission

12:00-13:00  Lunch

13:00-14:15  Nonproliferation Discussion

14:15-14:30  Break
14:30-16:00  Open Source Analysis for Safeguards  
*The IAEA uses open source analysis as a tool to complement its in-person inspection and verification activities. This lecture will provide an overview of some of the work that the IAEA undertakes in this regard.*  
**Dr. George Anzelon, Lawrence Livermore National Laboratory**

16:00-17:00  Open Source Analysis Exercise  
**Dr. George Anzelon, Lawrence Livermore National Laboratory**

**Friday, June 22**

09:00-12:00  Safeguards NDA Technical Tutorial  
*This exercise will provide hands-on experience with radiation detection equipment that is used by inspectors in the field. Participants will be able to identify radiological and nuclear material and understand the basics of nondestructive analysis in safeguards. Participants will also learn the basics of material control and accounting methods.*  
**Dr. Biays Bowerman, Group Leader, Nonproliferation and Homeland Security Field Support, BNL**  
**Mr. Samuel Velazquez, Nuclear Materials Management Group, BNL**

12:00-13:00  Lunch

13:00-16:00  Dual Use Technologies & Essential Equipment  
**Ms. Katherine Bachner & Mr. Jose Gomera**

**Monday, June 25**

09:00-09:30  Introduction to Safeguards Detector R&D at BNL  
**Mr. Luis Ocampo Giraldo, Safeguards Detector R&D, BNL**

09:30-12:00  Detector R&D Tour – a visit to the labs and facilities of the R&D group

12:00-13:00  Lunch

13:00-14:30  APEX Introduction  
*A comprehensive introduction to the Additional Protocol Exercise, which will begin on June 26th. The implementation and activities of this event will be led by the same team that leads new IAEA inspectors in a similar exercise.*  
**Mr. John Gilbert, BNL Consultant**

14:30-15:00  Break

15:00-17:00  Complementary Access Simulation
Tuesday, June 26

09:00-12:00  APEX
12:00-13:00  Lunch
13:00-17:00  APEX

Wednesday, June 27

09:00-12:00  APEX
12:00-13:00  Lunch
13:00-17:00  APEX

Thursday, June 28

09:00-10:30  APEX Participant Presentations of CA Activities
Moderated by Mr. John Gilbert
10:30-10:45  Break
10:45-12:00  Game Changers for Nonproliferation and Safeguards
A detailed presentation and discussion of game changers in the history and evolution of international nuclear safeguards implementation
Ms. Susan Pepper, Chair, Nonproliferation and National Security Department, Brookhaven National Laboratory (BNL)
12:00-13:00  Lunch
13:00-14:30  DPRK: Current Issues in Nonproliferation
14:30-14:45  Break
14:45-17:00  Iran: Current Issues in Nonproliferation

Friday, June 29

09:00-10:30  Lecture on Safeguards Implementation Experiences
Professional experiences in the life of an IAEA nuclear safeguards inspector
Mr. Christopher Gazze, DOE HQ, IAEA
10:30-10:45  Break
10:45-12:00  Wrap-up, presentation of course certificates