

Nuclear Nonproliferation, Safeguards, and Security in the 21st Century
Brookhaven National Laboratory, June 2009

Course Schedule

2009-05-11

June 8-12 WEEK 1		Morning	L U N C H	Afternoon	
Monday 8 th	10:15-12:15 Introduction to BNL and to the Course Kathy Gurski BNL Staff			13:30-15:00 Michael Rosenthal Tom Graham, Barclay Ward	15:30-17:00 Nuclear Fuel Cycle and Nuclear Weapons Allan Krass
Tuesday 9 th	08:45-10:15 Early Arms Control Efforts – Acheson-Lilienthal; Baruch Plan Tom Graham	10:45-12:15 From Denial to Atoms for Peace Barclay Ward		13:30-15:00 Early Strategic Arms Control (1955-1979) Jack Mendelsohn	15:30-17:00 Post-SALT Arms Control – 1980-present Jack Mendelsohn
Wednesday 10 th	08:45-10:15 Negotiation of the NPT Barclay Ward	10:45-12:15 NPT – Development of Nonproliferation Regime NWFZ Security Assurances Barclay Ward		13:30-15:00 NPT Article 6 Issues (Testing, CTBT, FMCT,) Les Paldy	15:30-17:00 NPT Article 6 Issues (continued) Les Paldy
Thursday 11 th	08:45-10:15 IAEA – The NPT's Nuclear Watchdog Michael Rosenthal	10:45-12:15 NPT Article 4 Peaceful Nuclear Cooperation IAEA Role Linda Gallini Fred McGoldrick		13:30-15:00 Peaceful Nuclear Cooperation Multilateral Arrangements – Zangger, NSG Linda Gallini Fred McGoldrick	15:30-17:00 Nonproliferation Since 1968 – Successes: the easy ones Tom Graham

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Friday 12th	08:45-10:15 Nonproliferation Since 1968 -- Harder Successes Tom Graham	10:45-12:15 Proliferation Since 1968 -- Long- Standing Failures: Israel, India, Pakistan Tom Graham	13:30-15:00 Nonproliferation Since 1968 –Current and Potential Issues Tom Graham	15:30-17:00 IAEA Videos: The Nuclear Age, International Safeguards BNL Staff

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June 15-19 WEEK 2	Morning		L U N C H	Afternoon	
Monday 15 th	08:45-10:15 INFCIRC/153, Concepts of Material Balance Accounting and C/S; inspection goals, DIV, etc. Diversion scenarios and diversion path analysis. Design of safeguards approaches <i>Les Fishbone</i>	10:45-12:15 Examples of material balance accounting <i>Les Fishbone</i>		13:30-15:00 The Life of an IAEA Inspector <i>Shirley Johnson</i>	15:30-17:00 Introduction to DIV and PIV exercises, Including reactor flows and inventories <i>Bob McNair Shirley Johnson</i>
Tuesday 16 th	DIV Exercise and PIV Exercise <i>Bob McNair Shirley Johnson BNL Staff</i>	DIV Exercise and PIV Exercise <i>Bob McNair Shirley Johnson BNL Staff</i>		DIV Exercise and PIV Exercise <i>Bob McNair Shirley Johnson BNL Staff</i>	DIV Exercise and PIV Exercise <i>Bob McNair Shirley Johnson BNL Staff</i>
Wednesda y 17 th	08:45-10:15 Inspection tools, NDA measurements, DA measurements, DIV; Support Program R&D <i>Brian Boyer</i>	10:45-12:15 IAEA Verifications at a Uranium Enrichment Plant <i>Brian Boyer</i>		13:30-15:00 IAEA Verifications at an Irradiated Fuel Chemical Reprocessing Plant <i>Shirley Johnson</i>	15:30-17:00 Iraq—Clandestine NW program; IAEA work under UN Security Council Resolutions <i>David Albright</i>
Thursday 18 th	08:45-10:15 Strengthening IAEA Safeguards - DPRK and South Africa Cases; Environmental Monitoring; <i>David Albright</i>	10:45-12:15 INFCIRC/153 limitations; transition to Additional Protocol <i>Ray Parsick Michael Rosenthal</i>		13:30-15:00 Strengthened IAEA Safeguards – Negotiations and Politics of the Model Additional Protocol <i>Norm Wulf</i>	15:30-17:00 Transformation of IAEA safeguards under the Additional Protocol <i>Shirley Johnson Michael Rosenthal</i>

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Friday 19 th	08:45-10:15 Strengthened IAEA Safeguards – Imagery Analysis <i>Frank Pabian</i>	10:45-12:15 Strengthened IAEA Safeguards – Issues, challenges, SIR <i>Dunbar Lockwood</i>		13:30-15:00 Challenges for the future; NGS <i>Adam Scheinman</i>	15:30-17:00 Videos: Frontline, 60 Minutes, Nuclear Threat Initiative <i>Les Fishbone</i>
June 22-26 WEEK 3	Morning		L U N C H	Afternoon	
Monday 22 nd	08:45-10:15 Strengthened IAEA Safeguards – Open Source Analysis <i>Rick Wallace</i>	10:45-12:15 Nonproliferation and Counterproliferation; WMD Commission <i>Tom Graham</i>		13:30-15:00 New Proliferation Threats in the 1990s and New Millennium : USSR Collapse Excess NM MPC&A <i>Dave Huizenga Les Fishbone</i>	15:30-17:00 New Proliferation Threats in the 1990s and New Millennium: Globalization of Technology Khan's Network <i>Caroline Russell</i>
Tuesday 23 rd	08:45-10:15 New Proliferation Threats in the 1990s and New Millennium: Terrorism, 1540 Action Plans, Terrorism Conventions <i>Barclay Ward</i>	10:45-12:15 Homeland Security Nuclear Terrorist Prevention (Policy) <i>Tom Graham</i>		13:30-15:00 International Fuel Cycle Control Options <i>Larry Scheinman</i>	15:30-17:00 International Fuel Cycle Control Options (continued) <i>Larry Scheinman</i>
Wednesday 24 th	08:45-10:15 Radioactive Materials and their Uses <i>Joanna Fowler</i>	10:45-12:15 Tutorial, including demonstrations, on detecting nuclear and other radioactive materials <i>Carl Czajkowski and BNL Staff</i>		13:30-15:00 Tutorial, including demonstrations, on detecting nuclear and other radioactive materials <i>Carl Czajkowski and BNL Staff</i>	15:30-17:00 RDDs and Response Measures <i>Steve Musolino</i>

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Thursday 25 th	Scenario for Dealing with a New Nuclear Threat IAEA Exercise	Groups A and B discuss and propose approach to meet new threat		Reports from Groups A and B	Class assessment of proposed approaches
Friday 26 th	Class assessment of current nonproliferation regime <i>BNL Staff</i>	Groups A and B discuss 21st century nonproliferation regime <i>BNL Staff</i>		Reports from Groups A and B <i>BNL Staff</i>	Class assessment of proposed nonproliferation regimes, wrap-up <i>BNL Staff</i>