

# Interdisciplinary Approaches to Nonproliferation Education



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# Overview and Objectives

- Nonproliferation education requires integration of science, technology, and policy
- Many ways to meet this challenge
- Successful interdisciplinary approaches are...
  - Respectful
  - Practical
  - Collaborative
- Examples from programs conducted by Center for Nonproliferation Studies and educational partners



# The James Martin Center for Nonproliferation Studies

*The James Martin Center for Nonproliferation Studies (CNS) at the Monterey Institute of International Studies is the largest nongovernmental organization in the United States devoted exclusively to research and training on nonproliferation issues. It strives to combat the spread of weapons of mass destruction) by training the next generation of nonproliferation specialists and disseminating timely information and analysis.*

*[cns.miis.edu](http://cns.miis.edu)*





**Monterey Institute  
of International Studies**  
*A Graduate School of Middlebury College*

# The Monterey Institute of International Studies

- The Monterey Institute of International Studies (MIIS) is a private educational institution located in Monterey, California
- Founded 1955; became a graduate school of Middlebury College in 2010
- Close to 800 graduate students in MA programs in international policy, business, language education, and translation & interpretation
- Over 350 students graduated with Certificate in Nonproliferation Studies 1997-2010
- Launched world's first M.A. degree in Nonproliferation and Terrorism Studies in Fall 2010



# Creating a Respectful Environment

- Everybody's different
- In an adult learning environment, *everyone* has something to learn *and* something to teach
- 360° Classroom
- Treat everyone as equally *intelligent* even when they are not equally *knowledgeable* on specific subjects
- Encourage everyone to contribute and to receive others' contributions
- Require learners to create content

# International Nuclear Safeguards Policy and Information Analysis Course

- Partnership with Lawrence Livermore National Laboratories sponsored by USDOE Next Generation Safeguards Initiative (NGSI)
- Intensive one-week course for graduate students and young professionals
- 75 students from 12 countries in three courses 2008-10 including IAEA and LLNL junior staff
- Presentations by policy and technical experts from national laboratories, CNS, IAEA, private sector
- Simulations of State Evaluation process and IAEA Board of Governors resolution
- Experts learn from each other



# Keeping it Practical

- “How will this help me do my job?”
- Answer that question for policy, science, and technical specialists
- Design backwards, deliver forwards
  - Begin course design with learning objectives (applicable knowledge and demonstrable skills)
  - Begin content delivery with premises and principles
- In an interdisciplinary course, minimize abstract theory
  - Requires deep background knowledge that many learners won't have
  - “Academic disputes are so intense because the stakes are so small.”
  - Save it for discipline-specific courses

# Train-the-Trainers Workshops

- Series of CNS workshops for developing nonproliferation faculty in China, Russia, FSU, and other countries
- Participating faculty from departments of physics, international relations, languages, etc.
- Conducted in language of instruction
- Include model instructional materials and recommended resources
- Follow-up with community-building activities



Moscow Seminar on Education and Training in Nuclear Security, Nonproliferation, and MPC&A, November 2006

# Making them Work Together

- Real-world proliferation problems can only be solved by collaborative efforts
  - Interdisciplinary
  - Interagency
  - International
- Collaboration does not come naturally to many of us
  - “Collaboration is twice as hard because you have to agree on everything.”
  - “I love to collaborate as long as I can work alone.”
- Organize interdisciplinary teams for problem-based learning
- Apply real-life conditions and constraints

# Arms Control Simulations

- Part of Nonproliferation Studies curriculum for 20+ years
- Based on current or future nonproliferation or arms control negotiations
  - New START
  - Non-Proliferation Treaty Review Conference
- Teams of students required to do what negotiators do
  - Draft treaty text
  - Report to governments
  - Testify in hearings
  - Maintain information security
  - Interact offline
- Input and assessment from experienced negotiators
- Students observe actual negotiations when possible



US-Russian New START simulation, Fall 2009



IAEA Director-General Yukia Amano meets with CNS students and staff, April 2010

# It's Worth The Effort

- Nonproliferation requires science and policy professionals to work together
- Interdisciplinary learning requires more effort but produces better results
- Programs that are respectful, practical, and collaborative offer the greatest chance of success
- CNS and MIIS look forward to continuing collaboration with university, government, NGO, and industry partners for innovation in nonproliferation education

# Questions?



# Thanks!

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