Nuclear Dossiers: U.S Priorities, Dilemmas
and Challenges in a Time of Nuclear Disorder

SEMINAR

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Nowhere has the United States exercised more vigorous leadership than in the nuclear realm, where the country has devoted unprecedented resources to establishing and maintaining a global order.

Since the advent of the nuclear revolution that changed the fundamentals of global politics and the nature of the international system, the United States has been entangled in an all-out mission to prevent the spread of nuclear weapons, to avoid catastrophic nuclear collisions with other great powers, to stop terrorists from getting access to nuclear material, and to control the export of sensitive technology without precluding access to nuclear technology for peaceful purposes.

In order to accomplish these goals, and at each turn of history (frequently marked by a shock or a major security crisis), the United States has faced deep dilemmas that have required hard choices in an ever evolving strategic environment.

As the world grows increasingly multifaceted, so must the role and leadership of the United States adapt in order to respond to existing and emerging challenges. The rise of nuclear terrorism, for instance, requires a new approach to safety and security of material and critical infrastructures and simultaneously demands stronger border control policies around the world. The continuous peril posed by rogue states’ development and acquisition of nuclear weapons and increasingly sophisticated delivery means calls for robust cooperation between the U.S. and regional and great powers with which the U.S. is concurrently in geo-political equivalent of arm wrestling. Finally, the principles upon which the nuclear relationships between superpowers have so far rested, such as strategic stability and nuclear deterrence, are fast eroding as nuclear weapons states revise their
nuclear posture or acquire conventional capabilities that put in jeopardy the already frail global nuclear balance.

How are existing U.S. policies currently tackling these dilemmas? How should young scholars approach these problems? What are the most relevant explanatory frameworks for examining nuclear ambitions among states and non-state actors? And what principles should guide the U.S. nuclear policies and strategies in the future?

The proposed seminar offers an in-depth analysis of selected nuclear issues that today top the U.S. nuclear agenda. The course seeks to explain the genesis and the evolution of these issues and to examine and debate the appropriateness of current policies.

The course offers both theoretical and policy perspectives on these issues so as to encourage students to experiment with different theoretical lenses and to familiarize themselves with the constraints and limits of policy formulation in the face of complex and pressing dilemmas.

**Seminar Structure**

Each seminar session will seek to address a specific question and are structured so as to offer students space to learn, interact and discuss. All seminars will open with a short 20-25 minute lecture by the instructor that frames the conversation. At each seminar, two students will then be asked to articulate their views on the subject based on the assigned readings. All students are expected to contribute to the discussion by providing a well-articulated and informed position based on the assigned readings as well as independent research and additional readings of their own choice. The central discussion question for each class is presented in a text box prior to the list of assigned readings.

**Seminar Assignments**

Final grades will be based on:

1) A **mid-term paper** that “assesses” a nuclear institution\(^2\) (organization, treaty or convention) of the student’s choosing;

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\(^1\) Senior Program Officer for Global Security and International Affairs, American Academy of Arts and Sciences; Associate of Managing the Atom at the Belfer Center for Science and International Affairs; Affiliate (Non-in-Residence) to the Center for International Security and Cooperation – CISAC at Stanford University.

\(^2\) The list of institutions to be researched together with the questions that will guide the analysis can be found at
2) **A final paper** on the future global nuclear order³;

3) **10-minute presentation** at the opening of one of the seminars: two students will be assigned per each seminar. The students will prepare a 10-minute presentation on the key points of the readings and will raise some questions for group discussion

4) **Group discussion**

5) **Attendance**

**Office Hours**

**Tufts Policy**

**Some web-sites you might want to consult in preparation for the seminar (not required)**

- International Atomic Energy Agency news site: [https://www.iaea.org/newscenter](https://www.iaea.org/newscenter)
- Rand/Nuclear Energy: [http://www.rand.org/topics/nuclear-energy.html](http://www.rand.org/topics/nuclear-energy.html)
- Brookings/Nuclear Energy: [http://www.brookings.edu/research/topics/nuclear-energy](http://www.brookings.edu/research/topics/nuclear-energy)
- Brookings/Nuclear Weapons: [http://www.brookings.edu/research/topics/nuclear-weapons](http://www.brookings.edu/research/topics/nuclear-weapons)
- American Academy of Arts and Sciences Nuclear Program: [https://www.amacad.org/content/Research/research.aspx?d=289](https://www.amacad.org/content/Research/research.aspx?d=289)

³ A discussion on the subject will be held during the last seminar of the semester
Some video material you might want to consider in order to prepare for the seminar (not required):

- **Hiroshima**, by Koreyoshi Kurahara and Roger Spottswoode, 1995
- **Dr. Strangelove** or: How I Learned to Stop Worrying and Love the Bomb, by Stanley Kubrick, 1964
- **War and Peace in the Nuclear Age**, available on Youtube: https://www.youtube.com/watch?v=iAtQn5299-Q
- **The man who saved the world**, by Peter Anthony 2014

**Suggested Schedule**

**Seminar #1:**

**Nuclear Dilemmas: Power, Anarchy and Interests**

The first lecture serves as an introduction to basic knowledge related to nuclear power. It explains the difference between a military and a civilian nuclear program, it examines the difference between a nuclear weapons state and a nuclear power state and sheds light on the dual-use nature of nuclear technology and the challenges to its governance. It also offers working definitions of concepts that will be employed throughout the seminar. Finally, it seeks to introduce students to the main debates on nuclear weapons as they will be further developed throughout the semester.

**Key question to be debated during group discussion:** Are nuclear weapons the great stabilizer or the greatest obstacle to global peace?

**Required readings:**

- Robert Jervis, *The meaning of the nuclear revolution: Statecraft and the Prospect of
Armageddon, Cornell University Press, 1989, Chapter 4-5

- John Holdren, Nuclear Energy and Nuclear Weapons, Fissile Material Group Briefing
- A Nuclear Iran: Promoting Stability or Courting Disaster? Watch the video of the conversation between Professor Scott Sagan and Professor Kenneth Waltz on two different interpretations of the role of nuclear weapons in global politics: https://www.youtube.com/watch?v=Xupuaqu_ruk
- Frances V. Harbour, Thinking About International Ethics: Moral Theory and Cases from American Foreign Policy, pp. 67-75

Additional readings:

- Marc Trachtenberg, History and Strategy (Princeton: Princeton University Press, 1991), 100-152

Seminar #2-3: The most difficult relationship? Understanding the U.S.-Russia Nuclear Interaction

The two lectures explore the complex, multi-faceted nuclear relation between the United States and Russia. In the lectures, we will discuss the evolution of nuclear postures of the two former Cold War rivals (from mutual assured destruction - MAD - to flexible response to the current nuclear interface) and investigate how the nuclear interplay between the two countries is changing in light of efforts to modernize their respective nuclear arsenals and the geo-political crises in which they are involved.
Key question to be debated during group discussion: Has the nuclear interaction between the countries changed? If so, why and how?

Required readings:


Additional readings

McGeorge Bundy, George Kennan, Robert McNamara and Gerard Smith: Nuclear weapons and the Atlantic alliance, Foreign Affairs, Vol. 60/4, Spring 1982, 753- 768
Robert Jervis, Why nuclear superiority doesn’t matter, Political Science Quarterly, 1979

Seminar #4-5: A New Cold War? China’s nuclear hedging and U.S. pivot to Asia
The two lectures will examine the past and current nuclear interplay between the United States and China as emerging great power. A conventional IR theory argues that the rise of great powers is always accompanied by major wars waged by status-quo powers seeking to prevent a shift in the global distribution of power. Will we face a new cold war, this time between China and the United States?

Key question to be debated during group discussion: How should the United States position itself so as to stabilize the nuclear triangulation with China and Russia? What principles should its nuclear posture adopts? What posture?

Required readings:
- Wang Jisi, China's search for stability with America, Foreign Affairs, September/October 2005 Issue

Nicola Horsburgh, Change and innovation in Chinese nuclear weapons strategy, China Information, 26 (2), 2012, pp. 185-204


Fu Ying: How China sees Russia, Foreign Affairs, January/February 2016 Issue

Additional readings:


Robert Zoellick, Whither China: From Membership to Responsibility?, Department of State Deputy Secretary of State, Remarks delivered to the National Committee on the United States and China Relations, New York City, September 21, 2005


Seminar #6-7: Extended Deterrence, Alliances and Nuclear Guarantees

Outside of the bilateral relations with Russia and China respectively, the United States is also entangled in a series of regional and trans-national alliances, frequently reliant on the U.S. nuclear umbrella for protection and security. The two most important alliances are in Europe – through NATO and in Asia through a series of bilateral accords with Japan, Taiwan and South Korea respectively. The lecture will offer an overview of the structure of these alliances systems and will explore whether their endurance is today a driver of stability or a cause of potential conflict with great powers.

Key question to be debated during group discussion: Are alliances helpful to nuclear stability or are they undermining it?
Required readings:
The North Atlantic Treaty, 4 April 1949:
http://avalon.law.yale.edu/20th_century/nato.asp
James Baker, Russia in NATO, The Washington Quarterly, winter 2002

Additional readings
Stephen Walt, Alliances in a Unipolar World, World Politics 61:1, January 2009, pp.86-120
Stéfanie von Hlatky, Andreas Wenger, The Future of Extended Deterrence: The United States, NATO, and Beyond, Georgetown University Press, 2015, Part 1
David Albright, Colin Gay, Taiwan: Nuclear nightmare averted, Bulletin of the Atomic Scientists, 1998
Seminar #8: Dangerous Nuclear Triangulations: The United States in between India and Pakistan

One of the most dangerous nuclear relationships in the world is the India-Pakistan nuclear dyad. The relationship has grown increasingly dangerous and unstable, riddled with deep-seated mistrust and rivalry. Both countries continue to expand their arsenal amid rising fundamentalist threats and geopolitical pressures. Pakistan, in particular, might soon have the third largest nuclear arsenal in the world. The United States has played a critical role in mediating between the two nuclear rivals but this strategy is becoming very costly in many ways.

Key question to be debated during group discussion: What role should the United States play in the complex nuclear interplay between India and Pakistan?

Required Readings:

- Mohan Malik, The China factor in the India-Pakistan conflict, Parameters Spring 2003
- PK Singh, The India-Pakistan Nuclear Dyad and Regional Nuclear Dynamics, Asia Policy, No 19, January 2015
- Michael Krepon and Julia Thompson, Deterrence stability escalation control in south Asia, Stimson Center, April 2015, Chapter 1-2-5-6
- Paul Kapur, India and Pakistan unstable peace: Why nuclear South Asia is not like cold war Europe, International Security, Vol. 30, Fall 2005

Additional readings

- Paul Bracken, The Second nuclear age, Foreign Affairs, January/February 2000
Marvin Miller and Lawrence Scheinman, Israel, India and Pakistan: Engaging the Non-NPT States in the Nonproliferation Regime, Arms Control Today, December 2003, pp. 15-20


Bruce Riedel, Avoiding Armageddon: America, India, and Pakistan to the Brink and Back, Brookings Institute, 2013, Chapters 5-8

Viping Narang, What does it take to deter? Regional power nuclear postures and international conflict, Journal of Conflict Resolution, 2013


Seminar #9-10: Proliferation and Nuclear terrorism

The seminars focus on the strategies and policies adopted by the United States and by international organizations to prevent states from acquiring nuclear weapons. Some of these instruments include the Nuclear Non Proliferation Treaty (NPT), the IAEA Additional Protocol and the Proliferation Security Initiative and Resolution 1540. We will study the origin and function of these institutions, their strengths and shortcomings and we will explore their effectiveness in light of major proliferation crises including Libya, Iraq, Iran and Syria.

Key question to be debated during group discussion: How should the next president of the United States address the problem of nuclear proliferation and terrorism?

Required readings:

George Perkovich, Bush's Nuclear Revolution: A Regime Change in Nonproliferation, Foreign Affairs 2003
Christopher Way and Jessica Weeks, Making it personal: regime type and nuclear proliferation, American Journal of Political Science, Vol. 58, No. 3, July 2014
Graham Allison, How to Stop Nuclear Terrorism, Foreign Affairs, January February 2004

Additional readings:
Matthew Bunn (2007) Bombs We Can Stop. American Scientist. 95(5)September-October, 452–454
- Avner Cohen and Marvin Miller, Bringing Israel’s Bomb out of the basement, Foreign Affairs September/October 2010
- The Proliferation Security Initiative: http://www.psi-online.info/
  http://belfercenter.ksg.harvard.edu/files/advancingnuclearsecurity.pdf (pp. 49-60)

Seminar #11: The Nuclear Renaissance and its consequences
Since 1999, emerging countries such as Vietnam, the United Arab Emirates, Malaysia, Ghana, Nigeria, Jordan and Turkey, among others, have sought to acquire nuclear technology for energy production. The race to establish nuclear power plants around the world has been defined as the “Nuclear Renaissance.” While the nuclear industry has been stagnating in developed countries, it has found renewed enthusiasm among developing and energy shortage-stricken countries. The spread of nuclear technology around the world brings with it critical consequences in terms of nuclear proliferation and nuclear terrorism risks.

🎁 Key question to be debated during group discussion: According to the NPT, access to nuclear technology is an inviolable right of state parties to the treaty. How can the spread of nuclear technology be made more proliferation resistant?

Required Readings:
- United States Institute of Peace, the Iran Primer, http://iranprimer.usip.org/resource/timeline-irans-nuclear-activities
- The Joint Comprehensive Plan of Action (JCPOA)/The Iran Agreement Text

Additional Readings:
- Matthew Kroenig, Time to Attack Iran: Why a Strike is the Least Bad Option, Foreign Affairs, January/February 2012
- Colin Khal, Not Time to Attack Iran, Foreign Policy, March/April 2012
- Avner Cohen and Marvin Miller, Bringing Israel’s Bomb Out of the Basement: Has Nuclear Ambiguity Outlived its Shelf Life?, Foreign Affairs, Vol. 89, No. 5, September/October 2010
Seminar #12: Into the future: cyber, space, and conventional capabilities in an already fragile nuclear order

In the 21st century, nuclear risks are increasingly coupled with risks from other emerging sophisticated technologies such as cyber and bio ones. These technologies might further destabilize an already fragile nuclear order.

Key question to be debated during group discussion: What should cyber-strategists learn from the Nuclear Order?

Required readings

- Richard A. Clarke, Cyber War: The Next Threat to National Security and What to Do About It, Ecco, 2010, Chapters 3 and 6 (“The Battlespace” and “How Offensive?”)
- Gary McGraw, “Cyber War is Inevitable (Unless We Build Security In),” *Journal of Strategic Studies*, 36 (1), February 2013, pp. 109–119

Additional readings

- Thomas Rid, “Cyber War Will Not Take Place,” *Journal of Strategic Studies*, 35 (1), February 2012, pp. 5–32
- United States, 2016 Cyber Security Strategy
- Dennis Gormely, Winning on Ballistic Missiles But Losing on Cruise: The Missile Proliferation Battle Arms Control Today, 2009
- Dennis Gormely, The Path to Deep Nuclear Reductions: Dealing with American Conventional Superiority, IFRI Proliferation Papers, Fall 2009
Seminar #13: What will the global nuclear order look like in 20 years?
The final seminar will look at how new conventional military capabilities and increasing competition in space might affect the current global nuclear order and the defense policies of major nuclear weapons states.

Required Readings:

- Hugh Gusterson, Nuclear Weapons and the Other in the Western Imagination, Cultural Anthropology, Vol. 14, No. 1, pp. 111-143
- George Shultz, William Perry, Henry Kissinger and Sam Nunn, Deterrence in the Age of Nuclear Proliferation, http://www.wsj.com/articles/SB10001424052748703300904576178760530169414
ANNEX 1 – LIST OF NUCLEAR INSTITUTIONS TO RESEARCH

- The Treaty of Non Proliferation of Nuclear Weapons (NPT)
- The Nuclear Supplier Group (NSG)
- The International Atomic Energy Agency Charter (IAEA)
- The Fissile Material Cut-Off Treaty (FMCT)
- The Comprehensive Nuclear Test Ban Treaty (CTBT)
- The UN Resolution 1540 on Nuclear Terrorism
- The Proliferation Security Initiative (PSI)
- The Strategic Arms Reduction Treaty (START) 2010
- The Strategic Arms Limitation Talks (SALT) 1967

Questions:

1) What type of threat does the nuclear institution seek to address? Is the threat related to nuclear weapons, nuclear energy, the control of nuclear material, state-actor driven threat?

2) What type of cooperation does the nuclear institution seek to enforce? Bilateral? Regional? Transnational?

3) What are the elements of strengths of the nuclear institution? And why should they be considered strengths in this current geo-political context?

4) What are the elements of weaknesses? And how can they be addressed given the current geo political landscape?