

NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) WEAPONS PROLIFERATION AND NONPROLIFERATION – NS 4280

Naval Postgraduate School - Summer Quarter 2002
Mon. & Wed. 1-3pm – 387 Glasgow Hall

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Seminar Overview

This advanced research seminar examines the origins of nuclear, biological, and chemical (NBC) weapons proliferation, and its impact on U.S. and international security. The objectives are to familiarize students with central debates and key cases, to think analytically and critically about the causes and consequences of proliferation, and to evaluate policy responses to impede, discourage, and cope with the spread of NBC weapons.

The seminar presumes familiarity with U.S. national security policymaking, and requires as a prerequisite either prior participation in NS 3280 or permission of the instructor. Contrary to the description in the department catalogue, this course is neither classified nor does it address nuclear strategy, deterrence theory, or U.S.-Soviet/Russian strategic arms control, topics that are covered in NS 3280. Counterproliferation (i.e., U.S. and allied military efforts to deter, defend against, and defeat NBC threats) are examined in a follow-on course, NS 4285, which also considers missile proliferation.

Although we often consider NBC weapons together as “weapons of mass destruction,” in this seminar we will take pains to distinguish *between* these types of unconventional arms. Due to intrinsic technical differences as well as contemporary political conventions, both their origins and their impact on U.S. and international security may differ fundamentally. Hence this seminar is divided into three parts, dealing in turn with nuclear, biological, and chemical weapons proliferation. We devote the bulk of the seminar to nuclear proliferation, which has been for decades of greatest political and security consequence, and arguably will remain so for the foreseeable future. Although we focus primarily on proliferant states, we also consider non-state NBC threats in concluding the course.

We consider nuclear affairs in five sub-sections. The first provides background on nuclear energy, materials, and weapons, and on the history of proliferation and nonproliferation. The second presents the debate between deterrence optimists and proliferation pessimists regarding the strategic consequences of the spread of nuclear weapons. We engage this debate through a case study of the security and political effects of nuclear proliferation in South Asia. The third sub-section examines the causes of nuclear proliferation. It begins with an overview of theoretical accounts for the phenomenon, and assesses their usefulness through historical and contemporary case studies of nuclear proliferation and restraint. The fourth section surveys policy instruments available to impede and respond to nuclear proliferation, including both multilateral approaches and selected U.S. measures. We conclude with a case study of nuclear developments on the Korean peninsula, which exemplify the contradictory implications of different policy measures aimed at addressing proliferation, and the sometimes severe trade-offs between nonproliferation and other international and U.S. foreign policy objectives.

Our study of biological and chemical weapons proliferation begins by reviewing technical issues, historical background, and proliferant state motivations. Each continues with focused country case studies, and then concludes by reviewing selected U.S. policies and key multilateral regimes. We examine the Soviet/Russian, Iraqi, and South African biological weapons programs, and chemical weapons production and use by Iran, Iraq, and South Africa. We will conclude the seminar by considering non-state NBC threats, reviewing general patterns and trends, examining the particular cases of Aum Shinrikyo and al-Qa'ida, and evaluating policy options to address NBC terrorist threats.

Evaluation

Your final grade will be based on four assignments: research paper 60%; paper briefing 20%; seminar introduction and discussion questions 10%; and seminar participation 10%. Extensions beyond the deadlines will be considered only for reasons that are beyond your control, such as a family illness or other emergency. Inform me in advance by email or telephone if for any reason you believe that you may require an extension.

Assignments

Paper proposal and annotated bibliography. Although not included in the seminar grade, you are required to submit a two-page proposal in class on 24 July. It must present the research question you will address in your paper, and explain both your general argument and how you intend to support it. The annotated bibliography must include at least six sources other than class assignments, and indicate how you will use each to support your argument.

Research paper. The core assignment is a 20- to 25-page research paper on any topic germane to the seminar. Your paper will be evaluated against a high academic standard, in terms of its structure, argumentation, and references. You are expected to incorporate a wide range of sources beyond those required for the seminar. The text of the paper may be used for – but cannot be drawn from – a departmental thesis. The research paper is due the beginning of class on 18 September.

Paper briefing. Each student will present the executive summary of their research paper for discussion by seminar participants. The briefing will not exceed 15 minutes, and will be evaluated for clarity, conciseness, and professionalism. We will design the briefing schedule collaboratively, so that student presentations may coincide with complementary topics in the course readings. For guidance on preparing effective briefings, it may be useful to review: Communications Consulting Group and Publications Department, RAND, *Guidelines for Preparing Briefings*, (Santa Monica, CA: RAND, 1996). <http://www.rand.org/publications/CP/CP269/CP269.pdf>

Seminar introduction and discussion questions. Each student will prepare and present introductory comments on a topic drawn from the course outline. This introduction will not exceed 10 minutes, and will be evaluated for clarity, conciseness, and professionalism. It should summarize the key themes examined in the readings, and must include a written set of 5 to 7 questions that will serve to guide the discussion for that seminar. These should formulate key questions, identify any important omissions, and highlight differences in analysis or interpretation among the readings.

Seminar participation. You are expected to participate actively in the seminar discussions, and to demonstrate that you have read and reflected upon the course readings.

Required Materials

You will receive an electronic copy of this syllabus by email to facilitate your access to online materials. Two copies of all articles and book chapters will be on reserve in Dudley Knox Library. The seminar also requires six books available at the Navy Exchange bookstore:

- Alibek, Ken, with Stephen Handelman. 2000. *Biohazard*. New York. Random House.
- Cirincione, Joseph, et al. 2002. *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.
- Price, Richard M. 1997. *The Chemical Weapons Taboo*. Ithaca. Cornell University Press.
- Reiss, Mitchell. 1995. *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities*. Washington, DC. Woodrow Wilson Center and Johns Hopkins University.
- Sagan, Scott D., and Kenneth N. Waltz. 2002. *The Spread of Nuclear Weapons: A Revised Debate*. New York and London. W.W. Norton & Company.
- Sokolski, Henry D. 2001. *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*. Westport, CT, and London. Praeger.

Online Resources on NBC Proliferation

Many resources on the Internet may be useful in your research for the seminar paper. Most of the following provide links to additional sites relevant to proliferation studies.

Acronym Institute

<http://www.acronym.org.uk/>

Air War College – U.S. Air Force Counterproliferation Center

<http://www.au.af.mil/au/awc/awcgate/awc-cps.htm>

Arms Control Today

<http://www.armscontrol.org/>

Australia Group

<http://www.australiagroup.net/index.html>

Bradford-SIPRI Chemical and Biological Weapons Project

<http://www.brad.ac.uk/acad/sbtwc/>

British American Security Information Council

<http://www.basicint.org/>

Brookings Institution – U.S. Nuclear Weapons Cost Study Project

<http://www.brook.edu/FP/PROJECTS/NUCWCost/RELATED.HTM>

Carnegie Endowment for International Peace – Non-Proliferation Project

<http://www.ceip.org/files/nonprolif/default.ASP>

Chemical and Biological Arms Control Institute (CBAIC)

<http://www.cbaci.org/>

Chemical Warfare/Chemical and Biological Defense Information Analysis Center (CBIAC)

<http://www.cbiac.apgea.army.mil/>

Defense Threat Reduction Agency (DTRA)

<http://www.dtra.mil/>

DoD Counterproliferation Network

<http://www.acq.osd.mil/cp/>

Federation of American Scientists (FAS)

<http://www.fas.org/>

Harvard-Sussex Program on CBW Armament and Arms Limitation

<http://fas-www.harvard.edu:80/~hsp/>

Henry L. Stimson Center

<http://www.stimson.org/>

International Atomic Energy Agency (IAEA)
<http://www.iaea.org/worldatom/>
Institute for Science and International Security (ISIS)
<http://www.isis-online.org/>
Lawrence Livermore National Laboratory – Center for Global Security Research
<http://cgsr.llnl.gov/>
Mitretek Systems
<http://www.mitretek.org/home.nsf/BusinessAreas/HomelandSecurity>
Monterey Institute of International Studies – Center for Nonproliferation Studies (CNS)
<http://cns.miis.edu/>
National Defense University – Institute for National Strategic Studies (INSS)
<http://www.ndu.edu/inss/inssh.html>
National Security Archives
<http://www.gwu.edu/~nsarchiv/>
Natural Resources Defense Council – “The Internet and the Bomb: A Research Guide”
<http://www.nrdc.org/nuclear/nuguide/guinx.asp>
Nautilus Institute
<http://www.nautilus.org/>
Nonproliferation Policy Education Center (NPEC)
<http://www.wizard.net/~npec/>
Organization for the Prohibition of Chemical Weapons (OPCW)
<http://www.opcw.org/>
Stanford University – Center for International Security and Cooperation (CISAC)
<http://cisac.stanford.edu/>
University of Georgia – Center for International Trade and Security (CITS)
<http://www.uga.edu/~cits/>
U.S. Department of State - Arms Control and International Security
<http://www.state.gov/t/>

----- **Seminar Schedule** -----

INTRODUCTION

8 & 10 July

- Cirincione, Joseph, *et al.* 2002. “Global Trends” and “The International Non-Proliferation Regime.” Pp. 1-34 in *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.
- Panofsky, Wolfgang K.H. April 1998. “Dismantling the Concept of ‘Weapons of Mass Destruction’.” *Arms Control Today*. http://www.armscontrol.org/act/1998_04/wkhp98.asp
- Andréani, Gilles. 1999. “The Disarray of U.S. Non-Proliferation Policy.” *Survival* 41(4): 42-61.
- Rumsfeld, Donald H. 27 June 2001. “Toward 21st-Century Deterrence.” *Wall Street Journal*.
- Recommended:* Office of the Secretary of Defense. January 2001. *Proliferation: Threat and Response*. Washington, DC. U.S. Government Printing Office. <http://www.defenselink.mil/pubs/ptr20010110.pdf>

NUCLEAR PROLIFERATION AND NONPROLIFERATION

History of Nuclear Proliferation and Nonproliferation

McNamara, Robert S. 12 February 1963. "The Diffusion of Nuclear Weapons with and without a Test Ban Agreement." Secret [declassified] memorandum for the President. Washington, DC. Office of the Secretary of Defense.

Mandelbaum, Michael. 1995. "Lessons of the Next Nuclear War." *Foreign Affairs* 74(2): 22-37.

Sokolski, Henry D. 2001. *Best of Intentions: America's Campaign against Strategic Weapons Proliferation*. Westport, CT, and London. Praeger.

15 & 17 July

Nuclear Technology and Forms of Nuclear Proliferation

Zimmerman, Peter D. 1993. "Technical Barriers to Nuclear Proliferation." Pp. 345-56 of *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results*. Zachary S. Davis and Benjamin Frankel, eds. London. Frank Cass.

Office of Technology Assessment, U.S. Congress. 1993. "Technical Aspects of Nuclear Proliferation," "Components, Design, and Effects of Nuclear Weapons," and "Enrichment Technologies." Pp. 119-80 of *Technologies Underlying Weapons of Mass Destruction*. OTA-BP-ISC-115. Washington, DC. U.S. Government Printing Office. <http://www.wws.princeton.edu/cgi-bin/byteserv.prl/~ota/disk1/1993/9344/934406.PDF>

Moodie, Michael. 1995. "Beyond Proliferation: The Challenge of Technology Diffusion." *Washington Quarterly* 18(2): 183-202.

Cohen, Avner, and Benjamin Frankel. 1990. "Opaque Nuclear Proliferation." Pp. 14-44 in *Opaque Nuclear Proliferation: Methodological and Policy Implications*. Benjamin Frankel, ed. London and Portland, OR. Frank Cass.

Deterrence Optimism and Proliferation Pessimism

Sagan, Scott D., and Kenneth N. Waltz. 2002. *The Spread of Nuclear Weapons: A Revised Debate*. New York and London. W.W. Norton & Company.

Lavoy, Peter R. 1995. "The Strategic Consequences of Nuclear Proliferation." *Security Studies* 4(4): 695-753.

Feaver, Peter D. 1995. "Optimists, Pessimists, and Theories of Nuclear Proliferation Management." *Security Studies* 4(4): 754-72

David, Steven R., Brahma Chellaney, Shai Feldman, Brad Roberts, Kenneth N. Waltz, and Scott Sagan. 1995. "The Kenneth Waltz-Scott Sagan Debate." *Security Studies* 4(4): 773-810.

22 & 24 July

Paper Proposal and Annotated Bibliography due 24 July

Strategic Consequences of Nuclear Proliferation in South Asia

Karl, David J. 1996/1997. "Proliferation Pessimism and Emerging Nuclear Powers." *International Security* 21(3): 87-119.

Feaver, Peter D., Scott D. Sagan, and David J. Karl. 1997. "Proliferation Pessimism and Emerging Nuclear Powers: Correspondence." *International Security* 22(2): 185-207.

Hagerty, Devin T. 1998. "Nuclear Weapons and the 1986-87 Brasstacks Crisis," "Nuclear Weapons and the 1990 Kashmir Crisis," and "Lessons and Implications." Pp. 91-116, 133-96 in *The Consequences of Nuclear Proliferation: Lessons from South Asia*. Cambridge, MA. MIT Press.

Bajpai, Kanti. 5 July 1999. "Testing the Limits: Indian Restraint vs Pak Brinkmanship." *Times of India*.
http://www.indianembassy.org/new/NewDelhiPressFile/Kargil_July_1999/Testing_Limits.html

Lancaster, John. 26 July 1999. "Kashmir Crisis Was Defused on Brink of War." *Washington Post*, p. A1.
<http://www.jammu-kashmir.com/archives/archives1999/99july26.html>

Kargil Review Committee Report. 2000. "Review of Events Leading Up to Kargil" and "Findings." Pp. 35-59, 189-209 in *Kargil Review Committee Report*. New Delhi. Government of India.

Hoyt, Timothy D. 30-31 May 2002. "Kargil: The Nuclear Dimension." Paper presented to conference on "Asymmetric Conflict in South Asia: The Cause and Consequences of the 1999 Limited War in Kargil." Monterey, CA. Naval Postgraduate School.

Kampani, Gaurav. 10 June 2002. "India's Compellence Strategy: Calling Pakistan's Nuclear Bluff over Kashmir." Monterey, CA. Center for Nonproliferation Studies. <http://cns.miis.edu/pubs/week/020610.htm>

29 & 31 July

Causes of Nuclear Proliferation: Security, Technology, Politics, Ideas, and Economics

May, Michael M. 1994. "Nuclear Weapons Supply and Demand." *American Scientist* 82:526-37.

Lavoy, Peter R. 1993. "Nuclear Myths and the Causes of Nuclear Proliferation." Pp. 92-212 in *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results*. Zachary S. Davis and Benjamin Frankel, eds. London. Frank Cass.

Flink, Steven. 1993. "Exploding the Black Box: The Historical Sociology of Nuclear Proliferation." *Security Studies* 3(2): 259-94.

Solingen, Etel. 1994. "The Political Economy of Nuclear Restraint." *International Security* 19(2): 126-69.

Barletta, Michael. 1999. "Democratic Security and Diversionary Peace: Nuclear Confidence-Building in Argentina and Brazil." *National Security Studies Quarterly* 5(3): 19-38.
<http://www.georgetown.edu/sfs/programs/nssp/nssq/barletta2.pdf>

Reiss, Mitchell. 1995. "Conclusion." Pp. 321-33 in *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities*. Washington, DC. Woodrow Wilson Center/Johns Hopkins.

Sagan, Scott. D. 1996/1997. "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb." *International Security* 21(3): 54-86.

August 5 & 7

Cases of Nuclear Restraint and "Rollback:"

Australia, Indonesia, Sweden, Argentina, Brazil, South Africa

Walsh, Jim. 1997. "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions." *Nonproliferation Review* 5(1): 1-20. <http://cns.miis.edu/pubs/npr/vol05/51/walsh51.pdf>

Cornejo, Robert M. 2000. "When Sukarno Sought the Bomb: Indonesian Nuclear Aspirations in the Mid-1960s." *Nonproliferation Review* 7(2): 31-43. <http://cns.miis.edu/pubs/npr/vol07/72/72corn.pdf>

Cole, Paul. 1996. *Atomic Bombast: Nuclear Weapon Decisionmaking in Sweden, 1945-1972*. Occasional Paper 26. Washington, DC. Henry L. Stimson Center.

- Barletta, Michael. 1997. "The Military Nuclear Program in Brazil." Working paper. Stanford, CA. Center for International Security and Arms Control. <http://cisac.stanford.edu/docs/barletta.pdf>
- Redick, John. 1995. *Nuclear Illusions: Argentina and Brazil*. Occasional Paper 25. Washington, DC. Henry L. Stimson Center.
- Lieberman, Peter. 2001. "Rise and Fall of the South African Bomb." *International Security* 26(2): 45-86.

Contemporary Proliferation Challenges: Israel

- Cirincione, Joseph, *et al.* 2002. "Israel." Pp. 221-236 in *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.
- Cohen, Avner. 1998. "Israel and the Evolution of U.S. Nonproliferation Policy: The Critical Decade (1958-1968)." *Nonproliferation Review* 5(2): 1-19. <http://cns.miis.edu/pubs/npr/vol05/52/cohen52.pdf>
- Feldman, Shai. 1997. "Nuclear Weapons in Israel's Security Policy," and "Arab Approaches to Nuclear Weapons." Pp. 95-120, 121-49 in *Nuclear Weapons and Arms Control in the Middle East*. Cambridge, MA, & London. MIT Press.
- Cohen, Avner. 1998. "Epilogue." Pp. 339-49 in *Israel and the Bomb*. New York. Columbia University Press.
- Arab League Council. 2000. "Israeli Nuclear Weapons and Weapons of Mass Destruction and the Danger that They Pose to Arab National Security." Draft resolution prepared for the 24 April-19 May 2000 Review Conference of the Nuclear Non-Proliferation Treaty (NPT). Unofficial translation. Monterey, CA. Center for Nonproliferation Studies, Monterey Institute of International Studies.

12 and 14 August

Iraq

- Cirincione, Joseph, *et al.* 2002. "Iraq." Pp. 271-287 in *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.
- Albright, David. 1997. "A Special Case: Iraq." Pp. 309-50 of *Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities, and Policies*. Oxford. Oxford University Press/SIPRI.
- Albright, David. 1998. "Masters of Deception." *Bulletin of the Atomic Scientists* 54(3): 44-50.
- Hamza, Khidhir. 1998. "Inside Saddam's Secret Nuclear Program." *Bulletin of the Atomic Scientists* 54(5). <http://www.bullatomsci.org/issues/1998/so98/so98hamza.html>
- Kay, David A. 1998. "Detecting Cheating on Nonproliferation Regimes: Lessons from Our Iraqi Experience." Pp. 16-35 in *Pulling Back from the Nuclear Brink: Reducing and Countering Nuclear Threats*. Barry R Schneider and William Dowdy, eds. London and Portland, OR. Frank Cass.

Iran

- Cirincione, Joseph, *et al.* 2002. "Iran." Pp. 255-69 in *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.
- Arnett, Eric. 1998. "Iran is Not Iraq." *Bulletin of the Atomic Scientists* 54(1): 12-14. <http://www.bullatomsci.org/issues/1998/jf98/jf98arnett.html>
- Litwak, Robert S. 2000. "Iran: Revolutionary State or Ready to Rejoin the 'Family of Nations.'" Pp. 158-95 in *Rogue States and U.S. Foreign Policy: Containment after the Cold War*. Washington, DC/Baltimore. Woodrow Wilson Center Press/Johns Hopkins University Press.
- Farhi, Farideh. January 2001. "To Have or Not to Have: Iran's Domestic Debate on Nuclear Options." Pp. 35-54

in *Iran's Nuclear Weapons Options: Issues and Analysis*. Washington, DC. Nixon Center. <http://www.nixoncenter.org/publications/monographs/Iran's%20Nuclear%20Weapons%20Options%20-%20Issues%20and%20Analysis2.pdf>

Tarzi, Amin. May 2002. "Proliferation Assessment: Iran's Strategic Environment after 9/11." Pp. 31-37 in *After 9/11: Preventing Mass-Destruction Terrorism and Weapons Proliferation*. Michael Barletta, ed. Occasional Papers 8. Monterey, CA. Center for Nonproliferation Studies. <http://cns.miis.edu/pubs/opapers/op8/op8.pdf>

Recommended: Buchta, Wilfried. 2000. *Who Rules Iran? The Structure of Power in the Islamic Republic*. Washington, DC. Washington Institute on Near East Policy/Konrad Adenauer Stiftung.

19 & 21 August

Soviet Nuclear Legacies

Cirincione, Joseph, et al. 2002. "Russia." Pp. 105-139 in *Deadly Arsenals: Tracking Proliferation of Weapons of Mass Destruction*. Washington, DC. Brookings Institution Press.

Potter, William C. 1995. *The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan, and Ukraine*. Occasional Paper 22. Washington, DC. Henry L. Stimson Center. http://cnsdl.miis.edu/npt/npt_2/potter-belkazukr.pdf

Policy Responses: Cooperative Threat Reduction

Alessi, Victor, and Ronald F. Lehman II. June/July 1998. "Science in the Pursuit of Peace: The Success and Future of the ISTC." *Arms Control Today*.
http://www.armscontrol.org/act/1998_06-07/vicjj98.asp

Bunn, Matthew, Oleg Bukharin, Jill Cetina, Kenneth Luongo, and Frank von Hippel. September/October 1998. "Retooling Russia's Nuclear Cities." *Bulletin of the Atomic Scientists* 54(5).
<http://www.bullatomsci.org/issues/1998/so98/so98bunn.html>

Wolfsthal, Jon Brook, Cristina Chuen, and Emily Ewell Daughtry, eds. 2001. "U.S. Nonproliferation Assistance Programs." Pp. 47-74 in *Status Report: Nuclear Weapons, Fissile Material, and Export Controls in the Former Soviet Union*. Monterey, CA, and Washington, DC. Monterey Institute of International Studies/Carnegie Endowment for International Peace. <http://cns.miis.edu/pubs/print/pdfs/nsr/ch3.pdf>

Fuller, James. Jan/Feb. 2002. "Debt for Nonproliferation: The Next Step in Threat Reduction." *Arms Control Today* 32(1). http://www.armscontrol.org/act/2002_01-02/fullerjanfeb02.asp

Multilateral Regimes, Export Controls, Sanctions, Intelligence

Van Diepen, Vann H. 29 July 2002. "Strengthening Multilateral Nonproliferation Regimes." Testimony before the Senate Governmental Affairs Committee, Subcommittee on International Security, Proliferation, and Federal Services. http://www.senate.gov/~gov_affairs/072902vandiepen.pdf

Davis, Zachary S. 1996. "The Spread of Nuclear-Weapon-Free Zones: Building a New Nuclear Bargain." *Arms Control Today* 26(1): 15-19.

Member States of the Nuclear Suppliers Group (NSG). 13 August 1997. "The Nuclear Suppliers Group: Its Origins, Role and Activities." INFCIRC/539. http://projects.sipri.se/expcon/infirc_539_1.htm

U.S. General Accounting Office (GAO). July 1998. "Nuclear Nonproliferation: Uncertainties with Implementing IAEA's Strengthened Safeguards System." NSIAD/RCED-98-184. <http://frwebgate.access.gpo.gov/cgi-bin/useftp.cgi?IPaddress=162.140.64.21&filename=n598184.pdf&directory=/diskb/wais/data/gao>

- Hathaway, Robert M. January/February 2000. "Confrontation and Retreat: The U.S. Congress and the South Asian Nuclear Tests." *Arms Control Today*. <http://www.armscontrol.org/ACT/janfeb00/rhjf00.htm>
- Mitchell, Ronald B. 1997. "International Control of Nuclear Proliferation: Beyond Carrots and Sticks." *Nonproliferation Review* 5(1): 40-52. <http://cns.miis.edu/pubs/npr/vol05/51/mitche51.pdf>
- Kokoski, Richard. 1995. "Verification and Intelligence." Pp. 199-242 in *Technology and the Proliferation of Nuclear Weapons*. Oxford. Oxford University Press/SIPRI.
- Recommended:* For a detailed review of U.S. agencies' roles and responsibilities in addressing proliferation, see: Deutch Commission. 1999. "Annex: Organizational Overviews." Pp. 1-91 of the Annexes in *Combating Proliferation of Weapons of Mass Destruction*. <http://www.senate.gov/~specter/11910book.pdf>

26 & 28 August

Nuclear Precedents and Policy Trade-Offs on the Korean Peninsula

- Kier, Elizabeth, and Jonathan Mercer. 1996. "Setting Precedents in Anarchy: Military Intervention and Weapons of Mass Destruction." *International Security* 20(4): 77-106.
- Englehardt, Michael J. 1996. "Rewarding Nonproliferation: The South and North Korean Cases." *Nonproliferation Review* 3(3): 31-37. <http://cns.miis.edu/pubs/npr/vol03/33/engel33.pdf>
- Recommended:* Reiss, Mitchell. 1995. "North Korea: Living with Uncertainty." Pp. 231-319 in *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities*. Washington, DC. Woodrow Wilson Center and Johns Hopkins University.
- Sigal, Leon V. 1997. "The North Korean Nuclear Crisis: Understanding the Failure of the 'Crime and Punishment' Strategy." *Arms Control Today* (May): 3-13. http://www.armscontrol.org/act/1997_05/sigal.asp
- Gallucci, Robert L. 1998. "U.S. Nonproliferation Policy: Lessons Learned from Our Experience with Iraq and North Korea." Pp. 3-15 in Barry R. Schneider and William Dowdy, eds. *Pulling Back from the Nuclear Brink: Reducing and Countering Nuclear Threats*. London. Frank Cass.
- May, Michael, *et al.* April 2001. "Introduction," "Executive Summary," and "Potential Adverse Developments." Pp. 1-14, 83-88 in *Verifying the Agreed Framework*. Livermore and Stanford, CA. Center for Global Security Research and the Center for International Security and Cooperation. <http://cisac.stanford.edu/docs/VAJ-June.pdf>

BIOLOGICAL WEAPONS (BW) PROLIFERATION AND NONPROLIFERATION

BW History, Technology, Motivations

- Pearson, Graham S. 15-19 June 2001. "Why Biological Weapons Present the Greatest Danger." Paper for the Seventh International Symposium on Protection against Chemical and Biological Warfare Agents, Stockholm. <http://www.brad.ac.uk/acad/sbtwc/other/GPBWdanger.pdf>
- Office of Technology Assessment, U.S. Congress. 1993. "Technical Aspects of Biological Weapon Proliferation." Pp. 71-117 in *Technologies Underlying Weapons of Mass Destruction*. OTA-BP-ISC-115. Washington, DC. U.S. Government Printing Office. <http://www.wws.princeton.edu/cgi-bin/byteserv.pr/~ota/disk1/1993/9344/934405.PDF>
- Tucker, Jonathan B. "Motivations For and Against Proliferation: The Case of the Middle East." Pp. 27-52 in *Biological Warfare: Modern Offense and Defense*. Raymond A. Zilinskas, ed. Boulder, CO. Lynne Rienner.

4 September (no class on Labor Day)

BW Country Case Studies: Soviet Union/Russia

- Alibek, Ken, with Stephen Handelman. 2000. *Biohazard*. New York. Random House.
- Moodie, Michael. Spring 2001. "The Soviet Union, Russia, and the Biological and Toxin Weapons Convention." *Nonproliferation Review* 8(1): 59-69.
- Tucker, Jonathan B., and Kathleen M. Vogel. Spring 2000. "Preventing the Proliferation of Chemical and Biological Weapon Materials and Know-How." *Nonproliferation Review* 7(1): 88-96.
<http://cns.miis.edu/pubs/npr/vol07/71/tucker71.pdf>

9 & 11 September

BW Country Case Studies: Iraq and South Africa

- Zilinksas, Raymond A. 1999. "Iraq's Biological Warfare Program: The Past as Future? Pp. 137-158 in *Biological Weapons: Limiting the Threat*. Joshua Lederberg, ed. Cambridge, MA and London. MIT Press.
- United Nations Special Commission on Iraq (UNSCOM). 25 January 1999. Executive summary (points 1-16) of "Status of Verification of Iraq's Biological Warfare Programme." [Annex C of UNSCOM's comprehensive review.]
- Leitenberg, Milton. 9 February 2000. "Deadly Unknowns about Iraq's Biological Weapons Program." Paper prepared for the Institute for Science and International Security. <http://www.isis-online.org/publications/iraq/leitenberg.html>
- Gould, Chandré, and Peter I. Folb. 2000. "The South African Chemical and Biological Warfare Program: An Overview." *Nonproliferation Review* 7(3): 10-23. <http://cns.miis.edu/pubs/npr/vol07/73/73gould.pdf>

Australia Group (AG) and the Biological and Toxin Weapons Convention (BWC)

- Australia Group. October 2000. "Background Paper." Government of Australia.
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