

# PROBLEMS OF PROLIFERATION

Spring 2010



## Dr. Margaret E. Kosal

Sam Nunn School of International Affairs

3 credits  
12:05 - 14:55 Th  
Ivan Allen College G17

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& by appointment  
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## Overview

This course will explore the international challenges of weapons of mass destruction (WMDs). We will examine the characteristics and addresses problems posed by nuclear, chemical, and biological weapons. Topics covered will include history and major theoretical frameworks relating to WMDs, such as the development, use, and motivations of major state weapons programs. We will explore efforts to control technology, material, and knowledge – *to limit proliferation* – via multilateral agreements, initiatives, export control, and national legislation, particularly evaluating the efforts to limit “rogue” state and terrorist acquisition. Strategies and regimes for implementing compliance and verification will be considered, along with limitations. Counterproliferation strategies to deter, deny, and passively or actively defend against nuclear, biological, and chemical weapons will be studied. We will look at the evolution and changing role of deterrence from mutually assured destruction to the debate on deterring terrorism. Also examined will be proliferation concerns related to the renewed interest in nuclear energy and emerging technologies, e.g., biotechnology, nanotechnology, synthetic genomics. Finally, we will briefly look at the impact of industry on control, verification, and policy related to WMD proliferation.

## **Class Requirements**

- 1) Attendance & participation (10%)
- 2) Assigned presentation (25%)
- 3) Collaborative policy memo & NSC simulation (40%)
- 4) Final Research Paper (25%)

### **Attendance and Participation**

You are expected to make reasonable efforts to attend all classes and participate actively. I recognize that both anticipated and unanticipated events may overlap with the regularly scheduled class.

### **Assigned Presentation**

Throughout the semester, you will present (20-30 minutes) on a topic from the syllabus. Topics will be assigned during the first class. Additional guidance will be discussed in class.

### **Collaborative Policy Memo and National Security Council Simulation**

These will be done in pairs, *working together*. One person will assume the role of representing national defense concerns (e.g., DoD); the other will assume the position of representing foreign policy interests (e.g., State Dept). Together you will choose a topic related to the course and generate policy recommendations. The deliverables will be (1) an individually-crafted 1 to 2-page policy info memo written from your perspective (as either representing national defense or foreign policy matters) and (2) a jointly-crafted 3 to 5-page white paper reconciling the two positions and recommending actions (such as to the National Security Council). From each pair of students, I should receive three documents. Further guidance will be distributed in class

#### Formatting

- Length: Indicated above.
- Font size: Maximum 12-point font, minimum 10-point.
- Margins: No larger than 1" all around.
- Grammar counts.

#### Submission

Electronic (pdf or MS Word).

Each group will be responsible for a 10-15 minute presentation on their policy proposal as part of a simulation of a National Security Council meeting: 5-10 minutes for the reconciled proposal and recommendations and 5 minutes for questions from the class.

Collaborative policy memo groups & topics are due NLT 1200 Tuesday, 23 February (week 7).

Collaborative policy memo is due NLT 1200 Tuesday, 16 March (week 10) and will be presented in class on Thursday, 18 March (week 10).

### **Research Paper**

Scope of topics is limited to those that you can justify having a relationship to the course.

I am more interested in detailed analysis than broad sweeps and historical overviews. Background should not exceed 5 pages. Your analysis, rather than reiterating someone else's, is of much more interest to me. Exception: if you want to refute or dispute another's analysis. Evidence counts – a lot! Unanswerable questions are okay. Discuss what is challenging in finding an answer or how a path to solution may be realized.

Please try to place emphasis on primary references rather than secondary or tertiary references. Although using the former to illustrate misunderstandings and poor analysis in the latter is by no means discouraged.

Topics, i.e., thesis statements, must be approved *a priori* (primarily to avoid repetition) NLT 1800 Friday, 31 March (week 11).

An outline will be due NLT 1200 Monday, 5 April (week 12).

Final paper is due 25 April. Late papers will be accepted through 0900 Monday 3, April (finals week) without penalty.

#### **Formatting**

Abstract: 50-100 words.

Length: INTA 3102: 5-10 pages

INTA 8803: 15-20 pages including references.

Font size: Maximum 12-point font, minimum 10-point.

Margins: No larger than 1" all around.

References: Minimum ten, no maximum (use good judgement).

Footnotes preferred.

Include full title and ending page numbers for journal articles.

Include page numbers for books.

*Online sources are not generally acceptable references; exceptions will be discussed.*

Make sure each page has your name and a page number.

Grammar counts.

#### **Submission**

Electronic (pdf or MS Word).

### **Grade Change Policy**

Appeals for grade changes should be reasonable both in argument and submission time, i.e., within two weeks of return.

### **Late Assignment Policy**

Generally, late assignments without documented excuse as outlined in Georgia Tech official policy will not be accepted. If you have a scheduling conflict, please contact me before the assignment is due.

### **Course Materials**

Six texts are required:

1. Joseph Cirincione, Jon Wolfsthal, Miriam Rajkumar, Deadly Arsenals: Nuclear, Biological, and Chemical Threats, Second Edition Revised and Expanded (2005)
2. Scott D. Sagan & Kenneth Waltz, The Spread of Nuclear Weapons: A Debate Renewed, Second Edition
3. John E. Mueller, Atomic Obsession: Nuclear Alarmism from Hiroshima to Al-Qaeda
4. Jonathan Tucker (editor), Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons
5. Andreas Wenger & Reto Wollenmann (editors), Bioterrorism: Confronting a Complex Threat
6. James Clay Moltz, The Politics of Space Security: Strategic Restraint and the Pursuit of National Interests

All texts are available at Engineer's Bookstore on Marietta Ave, NW.

Other short articles will be required reading; these will be announced in class and posted on the T-square course website (<https://t-square.gatech.edu>). Additional optional course resources will be available through the T-square course website.

### **Academic Integrity**

For all assignments, materials, and exams, you are expected to maintain the highest academic integrity.

Per the Georgia Tech Honor Code, plagiarism is an act of academic misconduct. The Georgia Tech Honor Code specifies: "Plagiarism' is the act of appropriating the literary composition of another, or parts of passages of his or her writings, or language or ideas of the same, and passing them off as the product of one's own mind. It involves the deliberate use of any outside source without proper acknowledgment." Plagiarism ranges from the blatant – purchasing a term paper or copying on an exam – to the subtle – failing to credit another author with the flow of ideas in an argument. Simply changing a few words from the writings of other authors does not alter the fact that you are essentially quoting from them. Paraphrasing of this sort, where you use the words of another almost verbatim without acknowledging your source, is the most common form of plagiarism among undergraduate students and academics. When you state another author's viewpoint, theory, or hypothesis – especially when it is original or not generally accepted – you must also include a reference to the originator. In general citations are unnecessary when the information is considered common knowledge or a matter of widespread agreement or controversy.

For more information on the Georgia Tech Honor Code, please see <http://www.honor.gatech.edu>.

**Accommodations for students with disabilities**

Per Georgia Tech policy: if you have a significant disability, special arrangements will be made to accommodate documented needs (through the ADAPTS office). Please contact me after class or at your earliest convenience.

**THE SYLLABUS IS DYNAMIC AND  
IS LIKELY TO BE UPDATED  
THROUGHOUT THE SEMESTER.**

## **Course Calendar and Content**

### **WEEK 1**

**14 January:** Introduction; current problems, policy, doctrine, and debate; theory

Mueller Chapters 1-5

Cirincione 1, 3

Sagan/Waltz Preface (both), 1, 2

### **WEEK 2**

**21 January:** Nuclear weapons – Russia, China, China, Israel, Roll-back of former nuclear programs

Mueller 6-10

Cirincione 6-10, 13; Appendix A (NPT), D (Nuclear Suppliers Group), E(CTBT)

### **WEEK 3**

**28 January:** Nuclear weapons – Pakistan & India

Cirincione 11, 12

Sagan/Waltz 3-5

### **WEEK 4**

**4 February:** **Movie: *Dr. Strangelove***

### **WEEK 5**

**11 February:** Nuclear weapons – DPRK, Iran, nuclear terrorism

Mueller 11-15, Epilogue

Cirincione 14, 15

Tucker Appendix (Jerry Post)

### **WEEK 6**

**18 February:** **Movie: *Last Best Chance***

### **WEEK 7**

**Policy memo topics due NLT 1200 Tuesday, 23 February**

**25 February:** Chemical Weapons – state programs

Cirincione 4, Appendix C (CWC), sections in state chapters on CW program (Iran, Libya, North Korea, Israel, India, US, France, Russia, China, South Africa)

**WEEK 8**

**4 March :** Chemical Weapons - terrorism

Tucker 1, 5, 6, 9, 11, 12, 14

**WEEK 9**

**11 March:** Biological Weapons – state programs

Cirincione Appendix B (BWC), sections in state chapters on BW program (Iran, Libya, North Korea, Israel, India, US, France, Russia, China, South Africa)

**WEEK 10**

**Policy memo due NLT 1200 Tuesday, 16 March.**

**18 March:** **National Security Council Simulation**, aka policy memo presentations

**21-27 March** ***SPRING BREAK***

**WEEK 11**

*29-30 March* *Sam Nunn Forum*

**Research paper topic due NLT 0800 Wednesday, 31 March.**

**1 April:** Biological Weapons - terrorism

Tucker 7, 8, 10, 13

Wegner 3, 4, 6, 7, 8

**WEEK 12**

**Research paper outline due NLT 1200 Monday, 5 April.**

**8 April:** Missiles

Cirincione 5, 17

**WEEK 13**

**15 April:** Missiles

**WEEK 14**

**22 April:** Space Weapons

Moltz 1-6

**Research paper due 25 April.****WEEK 15****29 April:** Space Weapons

Moltz 7-8

**Late research papers accepted through 0900 Monday 3, April without penalty.***One Last Thought***Collaboration, sharing ideas, etc.**

“Talk about your ideas. Help your colleagues work out their problems. Pay attention to what other people are doing, and see if you can learn something, or if you can contribute.

“Other than the mundane goal of getting your degree, you are in school to push back the frontiers of knowledge. You do this by generating and exploring new ideas. There is no way that you will ever be able to explore all of the ideas that you generate, but some of those ideas that you discard might be just what some of your colleagues are looking for.

“Human nature tends to make us want to hoard our own ideas. You have to fight against that. Human nature also tends to make us treat other people's ideas with disrespect. The closer the idea to our own area of research, the more likely some part of our brain will try to find fault with it. Fight against that even harder.

“You will find many people in academia who give in to the dark side. These Stealth Researchers never discuss what they are working on, except in vague and deceptive terms. They are experts at finding fault with the work of their colleagues. The Stealth Researcher writes papers that make very grand claims, but you can never quite figure out what they've accomplished and what they haven't. He is a master at omitting the key detail of the design or process that would enable others to follow his work. The Stealth Researcher is a knowledge diode, a roach motel for information. He has replaced the fundamental goal of discovery and publication with the twin evils of ego and empire.

“Be open about what you are working on. Be honest about what you've done, and even more honest about what you haven't. Don't ever hide an idea for fear that someone will steal it, even if you are talking to a Stealth Researcher. With patience, maybe we can cure them.”

*Prof Kristofer S.J. Pister**Electrical Engineering and Computer Science**UC Berkeley*