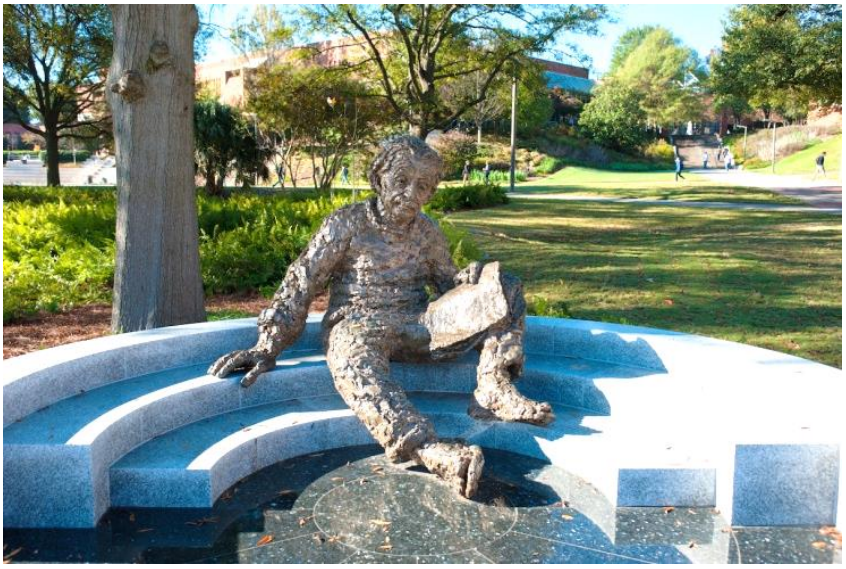
INTA 8001: Science, Technology & International Affairs II
SNSP Seminar
Spring 2016



Dr. Margaret E. Kosal
Associate Professor
Sam Nunn School of International Affairs

3 credits
TuTh 1:35-2:55 PM
Ivan Allen College/Habersham G-17

Office hours: *TBD*
& by appointment
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Overview

The course, as part of the Sam Nunn Security Program (SNSP), will explore and enable better understanding of the interactive roles; the effect of science and technology; and the economic, institutional, policy, and social contexts in which science and technology may implemented. This will be accomplished through extensive and intensive in-class discussions, guest lectures by experts, individual and group projects, and off-site visits to policy-making and policy–executing organizations, agencies, and institutions.

In this course, we will examine the relation between science and technology and international affairs, with an emphasis on national and international security. Rarely does science or technology (S&T) itself drive foreign or national security policy; the potential security, economic or other national-level consequences of the application of science to human endeavors is where technology intersects with policy predominantly. Science & technology can be causal, intervening, or determinant factors. The ability to recognize,

communicate, and identify nodes for intervention, change, or influence are strategic requirements for effective use of S&T domestically and internationally.

The ways in which governments act as proponents and sustainers, as well as consumer of S&T, vary significantly. These issues reflect important questions about the relationship between science, technology, and policy. Is scientific and technological development governable, and if so, who is responsible for governance? Is more and better science necessary for policymaking? Who is the best judge of the value of scientific research programs and the validity of scientific findings? Is the furtherance of scientific understanding and technological development always socially benign, and who decides?

Technological changes are anticipated to occur over the ensuing decades in a globalized world characterized by complex security challenges. While emerging technologies promise scientific breakthroughs, they also generate skepticism and controversies. How will these S&T developments impact stability, and what are the potential security threats? How will such emerging technologies affect the overall international security discourse?

This course introduces theories and methodologies for science and technology policy analysis. Students will learn how science and technology policy is made, with specific attention to the roles of government agencies, expert advisory committees, and the public. This analytic toolkit will be drawn from literature in a range of disciplines, including political science, public policy, economics, sociology, and history.

Learning Objectives

1. Students will demonstrate the ability to describe the causal and determinant relationships between science and technology (S&T) and security across different topic areas.
2. Students will demonstrate ability to apply concepts and multiple methodologies to explain phenomena in security related to S&T.
3. Students will understand and be able to assess relationships among organizational institutions & structures at the local, national, regional, & global level and S&T.
4. Students will become familiar with multiple major governance entities (e.g., international agreements and institutions) relevant to S&T and security.
5. Students will understand and learn about how S&T shaped history, promising S&T developments (such as information and communications technology, cognitive and biological sciences, robotics, and nanotechnology), and pressing S&T challenges for the future in an international context.
6. Students will practice effective communication skills. Students will be able to express their arguments clearly and effectively both in written reports and oral presentations.
7. Students will learn valuable team working skills. Students will be able to work in small groups in a way that demonstrates respect for their colleagues and efficiency in working collaboratively towards projects and goals.

Class Requirements

1) Attendance & participation, including field trip to DC (20%)
2) Group term project (35%)
    a. Proposal
    b. Status report
    c. Final document
    d. Final presentation
3) Scientist / engineer in policy (15%)
4) International agency/office/agreement (15%)
5) Country R&D institution *or* international scientific controversy paper & presentation (15%)

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.

Academic Integrity

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

While academic integrity takes many forms, one of the most common violations is plagiarism. 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, such as purchasing a term paper or copying on an exam, to the subtle, e.g., 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 and appropriating their ideas. 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 students and in general. 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.

In short: just don't cheat.
This is one instance when asking forgiveness
*rather than permission is *not* a good strategy.*

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 the professor after class or at your earliest convenience.

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

Course Calendar and Content

Readings will be assigned and distributed in hard copy or via T-Square in a timely manner throughout the semester.

Week 1 – 12 & 14 January

Tuesday
- Semester scope & overview of the semester
- Discuss and plan group project - *The intelligence community: 21st Century Challenges at the intersection of Intelligence, S&T, and international security*
  Main topics and sub-topics
  Choose a shared platform, e.g., T-Square, Google Docs, Slack
- Discussion of scientist /engineer in policy assignment
- DC trip preliminary info & planning

Texts (for the semester)
- Robert Kennedy *Of Knowledge and Power: The Complexities of National Intelligence*
- Jeff Richelson *The Wizards of Langley*

Thursday
- Role of scientists and engineers in advising and influencing policy

Reading:
- Browse - Vannevar Bush, "Science: The Endless Frontier," 1945 (may be found on-line in multiple places, e.g., in html at the NSF web site, https://www.nsf.gov/od/lpa/nsf50/vbush1945.htm or pdf scan of the original document, https://ia600408.us.archive.org/18/items/scienceendlessfr00unit/scienceendlessfr00unit.pdf)

Week 2 – 19 & 23 January

Tuesday
- Lecture related to *The intelligence community: 21st Century Challenges at the intersection of Intelligence, S&T, and international security*

Thursday
- Guest lecture by Prof Alasdair Young on EU regulatory & trade policies & S&T; including implications of the Transatlantic Trade and Investment Partnership (TTIP) for EU, US, and international S&T endeavors

Reading:
- Wiener, J.B. et al (2011) (eds), The Reality of Precaution: Comparing Risk Regulation in the United States and Europe, RFF Press, pp 3-27 & 519-22. [To be distributed via T-square.]

Week 3 – 26 & 28 January

Tuesday
- Scientists and engineers involved in policy discussions

Thursday
- Semester project proposals due electronically NLT noon 28 January directly to MEK with cc to snsp2015-2016@t-square.gatech.edu
- Discussion of semester group project proposals

Week 4 – 2 & 4 February

Tuesday
- Guest lecture by Tom McDermott on "Strategic and Security Implications of the Changing Arctic"

Thursday
- Guest lecture by Prof Bob Kennedy on US intelligence

Week 5 – 9 & 11 February

Tuesday
- Guest lecture by COL Mike Quinn, US Army, on experience leading the implementation of a major WMD treaty

Thursday
- Lecture related to *The intelligence community: 21st Century Challenges at the intersection of Intelligence, S&T, and international security*

Week 6 – 16 & 18 February

Tuesday
- International S&T treaty, agreement, organization, or agency discussions

Thursday
- Guest lecture by COL Lonnie Carlson, US Army, (& PhD, Materials Science) on counter-WMD strategy

Week 7 – 23 & 25 February

Tuesday
- Guest lecture by Prof Adam Stulberg on network analysis, tacit knowledge, and nuclear material smuggling

Thursday
- Group project semester status updates & discussions

Week 8 – 1 & 3 March

Tuesday
- DC Bureaucracy and Policy-Making Orientation for S&T

Thursday
- Foreign states S&T (or R&D) /// or /// controversy discussions

Week 9 – 8 March

- Preparation for Washington, D.C. trip

Week 10 – 15 & 17 March

No class

Week 11

Spring Break

March 21-25
- Washington, D.C. Trip

Week 12 – 29 & 31 March

Discussions on DC visit

Week 13 – 5 & 7 April

TBD

Week 14 – 12 & 14 April

Group project presentation

Week 15 – 19 & 21 April

Group project presentation

Week 16 – 26 April

Year wrap-up, "hot-wash," and synthesis of course

One More 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