INTA 8001: Science, Technology & International Affairs II
SNSP Seminar
Spring 2021

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3 credits
Fri 11:00 AM - 1:45 PM
Ivan Allen College/Habersham G-17

Office hours: TBD
& by appointment
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Overview
The course, the second semester 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.

This course will provide:

- Background on the science & technology policy formation, with an emphasis on US systems and security policies
- A multidisciplinary toolkit for thinking about science & technology policy and security, including an understanding of social science methods, theories, and approaches to science & technology policy and security.

**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 in their research 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.

**Course Mantra**
Semper Gumby, aka always flexible.

**Class Requirements**

1) Class scenarios (10%)
2) Class-organized guest speakers (20%)
3) Year-long project (70%)
   a. Revised/updated proposal, due week 2
   b. Status report
   c. Draft paper
   d. Final document
   e. Final presentation

**Attendance and Participation**

You are expected to make reasonable efforts to attend all classes and participate actively. Attendance will be recorded due to the global pandemic but will not count toward (or against) your class grade. I recognize that both anticipated and unanticipated events may overlap with the regularly scheduled class. If you are not feeling well, don’t attend class physically. No doctor’s note will be required. Semper Gumby.

**Arriving Late and Departing Early**

While I recognize that both anticipated and unanticipated events may overlap with the regularly scheduled class, if you have an ongoing conflict that occurs at the same time as this class, perhaps you should reconsider. Repeated tardiness reflects poorly on you and can disrupt the entire class. If you ask to depart my class early for another event, you are communicating what is your priority. I reserve the right to make attendance a portion of the grade and penalize for lateness if it is a reoccurring problem.

**Electronic Devices**

They are allowed. My right to rescind is reserved. It has been found that use of electronic devices can hinder learning and impact your grade, see e.g., “Checking phones in lectures can cost students half a grade in exams“ and primary data included therein, [https://phys.org/news/2018-07-students-grade-exams.html](https://phys.org/news/2018-07-students-grade-exams.html). The other problem is rudeness or the unintended perception of rudeness, which is especially bad when/if we have guest speakers. Unfortunately, this has been a problem in the past on multiple occasions, so it now gets a section in the syllabus.
**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.

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**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, via the class listserv, or uploaded to “Files” section of the class Canvas site in a timely manner throughout the semester.

Week 1 – 15 January

– “Revitalizing the US-China Science Relationship” lecture by Prof Deborah Seligsohn, Villanova University w/comments by Dean Kaye Husbands Fealing, GT
– Return of last semester’s papers
– Scenarios

Readings:


Optional/further reading


**Week 2 – 22 January**

- Semester scope & overview of the semester
- Progress review & next steps on “Strategic Implications of Emerging Dual-Use Technologies and their Role in Future Military Operating Environments” projects
- Guest speaker nominations and initial planning
- Scenarios for planning

**Week 3 – 29 January**

- Revised project proposals due electronically NLT noon, Thursday, 28 January directly to MEK with cc to class listserv. Be prepared to present and discuss during first half of class.
- Continued discussion of scenario process and development of cohort scenarios for “Strategic Implications of Emerging Dual-Use Technologies and their Role in Future Military Operating Environments”
- (Time-permitting) Weapons of Mass Destructions (WMD), i.e., nuclear, chemical, and biological agents and weapons & US Strategy

**Readings:**

- *** Sections of WMD, Director of National Intelligence (DNI) Coat’s Statement for the Record of the Worldwide Threat Assessment of the US Intelligence Community, [This is the most recently available document. The testimony (& accompanying report), which was scheduled for February 2020, was delayed by the administration.] https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf
- *** DNI Clapper’s Statement for the Record of the Worldwide Threat Assessment of the US Intelligence Community, 9 February 2016, p. 9 on “Genome Editing,”
Further Readings:

Week 4 – 5 February
- Guest speaker selection and planning
- Weapons of Mass Destructions (WMD), i.e., nuclear, chemical, and biological agents and weapons
  - Nonproliferation, arms control, and disarmament
  - International institutions – the NPT, CWC, & BWC +

Readings

**Nuclear**

- Albert Einstein’s Letter to Pres FD Roosevelt, 2 August 1939, https://www.osti.gov/opennet/manhattan-project-history/Events/1939-1942/einstein_letter.htm (be sure you look at the actual letter, not just the DOE write-up)

Chemical and Biological


Optional/further readings


- NDU’s *Prism* special issue on Countering WMD, May 2018, [http://cco.ndu.edu/PRISM-7-3/](http://cco.ndu.edu/PRISM-7-3/)

General resources and more readings on WMD


Week 5 – 12 February

- Cohort scenarios due
- Updates on guest speakers
- WMD (continued)

Readings


Optional/further readings


Week 6 – 19 February

- Guest Speaker, Dr. Natalia Lamberova, Nunn School, GT on “the Puzzling Politics of R&D”
- WMD (continued)
- WMD Terrorism

Readings


Optional/further reading


**General resources and more readings on terrorism**


Marc Sageman, *Leaderless Jihad*

Jessica Stern, *Terror in the Name of God: Why Religious Militants Kill*


**Week 7 – 26 February**

- Tentative meeting with DPoP – Via VTC
- Updated briefing book pages due to MEK NLT Sunday, 21 February at noon.

**Week 8 – 5 March**

- Guest lecture TBC

**Week 9 – 12 March**

*Tentative SOCOM Update* – Via VTC
Updated briefing book pages due to MEK NLT Sunday, 7 March at noon.
Week 10 – 19 March

- International scientific controversies

Readings

- Martin Enserink, “Controversial Studies Give a Deadly Flu Virus Wings,” *Science*, 02 December 2011, 334:6060, pp 1192-1193; [http://science.sciencemag.org/content/334/6060/1192](http://science.sciencemag.org/content/334/6060/1192)
- “How to respond to CRISPR babies,” *Nature*, 5 December 2018, [https://www.nature.com/articles/d41586-018-07634-0](https://www.nature.com/articles/d41586-018-07634-0)
- Ewen Callaway, “Ban on ‘gene drives’ is back on the UN’s agenda — worrying scientists,” *Nature*, 15 November 2018, [https://www.nature.com/articles/d41586-018-07436-4](https://www.nature.com/articles/d41586-018-07436-4)
Week 11 – 26 March
  – Guest lecture TBC

Week 12 – 2 April
  – Guest lecture TBC

Draft papers for round-robin cohort review due Thursday, 1 April, NLT noon.

Week 13 – 9 April
  – Guest lecture TBC
  – Reviews of draft papers due 8 April March, NLT noon.

Week 14 – 16 April
  – Yearlong project presentations: Strategic Implications of Emerging Dual-Use Technologies and their Role in Future Military Operating Environments

Week 15 – 23 April
  – Yearlong project presentations: Strategic Implications of Emerging Dual-Use Technologies and their Role in Future Military Operating Environments
  – Year wrap-up, “hot-wash,” and synthesis of year

Final papers due 22 April. Late papers accepted without penalty through noon, Wednesday, 5 May (based on a 10 May grade submission deadline; if the registrar announces a different grade submission deadline, reserve the right to adjust the late paper acceptance date).
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