

# INTRO TO GLOBAL WMD ISSUES

INTA 2042



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3 credits  
MW 11AM - 12:15PM  
IC 209

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### Overview

This course will explore the challenges of weapons of mass destruction (WMD). We will examine the characteristics and address the problems posed by nuclear, chemical, and biological weapons. Topics covered will include history and major theoretical frameworks relating to WMD, such as the development, use, and motivations of major state weapons programs and non-state actors. 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 their limitations. Counterproliferation strategies to deter, deny, and passively or actively defend against nuclear, biological, and chemical weapons will be studied. Also examined will be proliferation concerns related to emerging technologies, e.g., space weapons, biotechnology, nanotechnology, and synthetic genomics.

13 August 2020

## **Learning Outcomes**

- Students will understand causal and determinant relationships between science and technology (S&T) and international affairs across different topic areas.
- Students will understand and learn about how S&T shaped the history of WMD, promising S&T developments related to global WMD issues, and pressing S&T challenges for the future in an international context.
- Students will demonstrate ability to apply concepts and multiple methodologies to explain phenomena in WMD security related to S&T.
- Students will understand and be able to assess relationships between organizational institutions, governance entities & structures (e.g., international agreements and institutions) and WMD, including organizations with S&T missions.
- Students will be able to use their knowledge of international affairs in a practical problem-solving way to address issues of immediate international concern.

### *General Education*

- Learning Goal E: Social Sciences. Student will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

## **Course Mantra**

Semper Gumby, aka always flexible.

## **Course Materials**

Two texts are required:

- 1) Joseph Cirincione, Jon Wolfsthal, Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, Second Edition Revised and Expanded, 2005
- 2) Jonathan Tucker (editor), *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, MIT Press, 2000

Other short articles will be required reading; these will be announced in class and posted via the Canvas course website or distributed via the required class list serv.

## **Class Requirements**

- 1) Weekly writing prompts and exercises (50%)
- 2) Analytical Essays 1 (15%)
- 3) Analytical Essays 2 (15%)
- 4) Analytical Essays 3 (20%)

## **Attendance and Participation**

You are expected to make reasonable efforts to attend all classes. I recognize that both anticipated and unanticipated events may overlap with the regularly scheduled class time. If you're sick, please stay home.

### **COVID-19 Adjustments**

Masks are required in class. Social distancing is required. Attendance will be taken due to the global pandemic for potential contact tracing, if needed. We will have a seating chart to enable contact tracing. If you are not feeling well, don't attend class physically. No doctor's note will be required. I reserve the right to make changes throughout the semester. Semper Gumby.

### **Grade Change Policy**

Appeals for grade changes should be reasonable both in argument and submission time, i.e., within two weeks of return. Specific detailed information on grade change will be distributed upon return of assignments.

### **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>. 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.

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.

***More simply put: don't cheat.***

***When in any doubt, give credit.***

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 at your earliest convenience.

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

## **Course Calendar and Content**

### **WEEK 1**

17 & 19 August

Overview of the class, syllabus, and class requirements.

Introduction to current issues.

Atomic physics & start of the nuclear age

#### **Required Reading:**

- White House, National Strategy for Countering Weapons of Mass Destruction Terrorism, December 2018, <https://www.whitehouse.gov/wp-content/uploads/2018/12/20181210-National-Strategy-for-Countering-WMD-Terrorism.pdf>
- CRS Report on “Emerging Military Technologies: Background and Issues for Congress,” which was 17 July 2020, <https://crsreports.congress.gov/product/pdf/R/R46458>
- 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>

#### **Required Web Subscription:**

- *Proliferation News*: A twice-weekly email of aggregated news on nuclear nonproliferation from the Carnegie Endowment for International Peace, <http://carnegieendowment.org/publications/pronews/>  
  
//or//
- *Nuclear Policy News*: A daily email of news clips from around the world on nuclear issues from the Center for Strategic and International Studies’ Project on Nuclear Issues, <https://nuclearnetwork.csis.org/news-sign-up/>  
  
//and//
- *Health Security Headlines*: a daily update on US and global health security from the Johns Hopkins Center for Health Security, <http://www.centerforhealthsecurity.org/resources/hsh/>

### **WEEK 2**

24 & 26 August

The nuclear revolution

Use at the end of World War II

Nuclear weapons complex, expansion, & testing

Nuclear proliferation

**Required Reading:**

- *Deadly Arsenals*, Chapter 1-3
- 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](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)
- Amy F. Woolf & James D. Werner, “The U.S. Nuclear Weapons Complex: Overview of Department of Energy Sites,” Congressional Research Service, 3 February 2020, <https://crsreports.congress.gov/product/pdf/R/R45306>

**Optional Podcast:**

- MIT Technology and Culture Forum with Joe Cirincione on “Bomb Scare: The History and Future of Nuclear Weapons,” 13 December 2011, <http://techtv.mit.edu/videos/16218-bomb-scare-the-history-and-future-of-nuclear-weapons>

**Optional Reading:**

- Amy F. Woolf, “U.S. Strategic Nuclear Forces: Background, Developments, and Issues,” Congressional Research Service, 27 April 2020, <https://fas.org/sgp/crs/nuke/RL33640.pdf>
- Amy F. Woolf, “Nonstrategic Nuclear Weapons,” Congressional Research Service, 4 May 2020, <https://fas.org/sgp/crs/nuke/RL32572.pdf>
- OTA, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA 1993), chapter 4, “Technical Aspects of Nuclear Proliferation,” pp 119-195, <https://ota.fas.org/reports/9344.pdf>
- Sam Nunn, “Away from a World of Peril,” *Survival*, February-March 2012, pp 234-244, <http://www.tandfonline.com/doi/abs/10.1080/00396338.2012.657556>

**WEEK 3**

31 August & 2 September

Arms control, disarmament, and nonproliferation

The Nuclear Non-Proliferation Treaty (NPT) & other treaties

Cooperative Threat Reduction (CTR)

**Required Reading:**

- *Deadly Arsenals*, Chapter 6-10
- *Deadly Arsenals*, Chapter 11-13; Appendixes A (NPT), D (Nuclear Suppliers Group), E (CTBT)
- U.S. Defense Secretary Robert McNamara to President John F. Kennedy, “The Diffusion of Nuclear Weapons with and without a Test Ban Agreement,” memorandum, 12 February 1963, <https://fas.org/man/eprint/dod1963.pdf>

**Browse:**

- Paul Kerr, “Iran’s Nuclear Program: Status,” Congressional Research Service, 20 December 2019, <https://www.everycrsreport.com/reports/RL34544.html>
- (Name Redacted), “China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues, Congressional Research Service, 5 January 2015, <https://www.everycrsreport.com/reports/RL31555.html>
- Amy F. Woolf, Paul K. Kerr, & Mary Beth D. Nikitin, “Arms Control and Nonproliferation: A Catalog of Treaties and Agreements,” Congressional Research Service, 26 March 2020, <https://fas.org/sgp/crs/nuke/RL33865.pdf>

**Optional Readings:**

- Richard G. Lugar, “Nunn-Lugar: Science Cooperation Essential for Nonproliferation Efforts,” *Science & Diplomacy*, March 2012, <http://www.sciencediplomacy.org/perspective/2012/nunn-lugar>
- Mary Beth D. Nikitin, “The Nuclear Ban Treaty: An Overview,” Congressional Research Service, 10 July 2017, <https://fas.org/sgp/crs/nuke/IN10731.pdf>
- Matthew Harries, “The Real Problem With a Nuclear Ban Treaty,” Carnegie Endowment for International Peace, 15 March 2017, <http://carnegieendowment.org/2017/03/15/real-problem-with-nuclear-ban-treaty-pub-68286>

**WEEK 4**

7 & 9 September

Nuclear terrorism

**Required Reading:**

- *Deadly Arsenals*, Chapter 14 &15
- Rolf Mowatt-Larssen, “Al Qaeda Weapons of Mass Destruction Threat: Hype or Reality?” January 2010, <https://www.belfercenter.org/publication/al-qaeda-weapons-mass-destruction-threat-hype-or-reality>
- *Toxic Terror*, Appendix

**Required Viewing:**

- Watch: *Last Best Chance & Nuclear Tipping Point*

**Browse:**

- Movie website: <http://www.lastbestchance.org/>
- Movie available: <https://youtu.be/ivuqILMeRI>
- Documentary website: <https://www.nti.org/about/projects/nuclear-tipping-point/>

**WEEK 5**

14 & 16 September

Chemical Weapons – the agents, first use in WWI, non-use in WWII

**Required Reading:**

- *Deadly Arsenals*, Chapter 4; Appendix C (CWC), sections in state chapters on CW program (Iran, Libya, North Korea, Israel, India, US, France, Russia, China, South Africa)

**Browse:**

- Federation of American Scientists (FAS) Biological and Chemical Weapons website: <http://www.fas.org/programs/bio/index.html>

**Optional Reading:**

- OTA, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA 1993), chapter 2, “Technical Aspects of Chemical Weapon Proliferation,” pp 15-69, <https://ota.fas.org/reports/9344.pdf>

**WEEK 6**

21 & 23 September

Chemical Weapons

State programs after WWII

CWC

**Required Reading (continued from Week 5):**

- *Deadly Arsenals*, Chapter 4; Appendix C (CWC), sections in state chapters on CW program (Iran, Libya, North Korea, Israel, India, US, France, Russia, China, South Africa)
- Dianne E. Rennack & Cory Welt “Russia, the Skripal Poisoning, and U.S. Sanctions,” 14 August 2019, <https://crsreports.congress.gov/product/pdf/IF/IF10962>

**Browse:**

- Federation of American Scientists (FAS) Biological and Chemical Weapons website: <http://www.fas.org/programs/bio/index.html>

**Optional Reading:**

- OTA, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA 1993), chapter 2, “Technical Aspects of Chemical Weapon Proliferation,” pp 15-69, <https://ota.fas.org/reports/9344.pdf>
- Gregory D. Koblentz, “Regime Security: A New Theory for Understanding the Proliferation of Chemical and Biological Weapons,” *Contemporary Security Policy*, 2013, 34:3, pp 501-525, <https://doi.org/10.1080/13523260.2013.842298>

***Analytical Essays #1 due NLT Monday, 21 September 12:15PM***

***Interim Grades due at beginning of Week 7, i.e., 28 September***



**WEEK 7**

28 & 30 September

Chemical Weapons - terrorism

**Required Reading:**

- *Toxic Terror*, Chapters 1, 5, 6, 9, 11, 12, & 14

**Optional Reading:**

- Gregory D. Koblenz, “Predicting Peril or the Peril of Prediction? Assessing the Risk of CBRN Terrorism,” *Terrorism and Political Violence*, 2011, 23:4, pp 501-520, <https://doi.org/10.1080/09546553.2011.575487>

**WEEK 8**

5 & 7 October

Biological Weapons – state programs from Kaffa to Sverdlovsk

**Required Reading:**

- *Deadly Arsenals, Deadly Arsenals*, sections in state chapters on BW program (Iran, Libya, North Korea, Israel, India, US, France, Russia, China, South Africa)

**Optional Reading:**

- Ann M. Becker, “Smallpox in Washington’s Army: Strategic Implications of the Disease During the American Revolutionary War,” *The Journal of Military History*, April 2004, pp 381-430; <http://muse.jhu.edu/journals/jmh/summary/v068/68.2becker.html>

**WEEK 9**

12 & 14 October

Biological Weapons proliferation & nonproliferation efforts

Political and technical challenges of limiting and verifying biological weapons

**Required Reading:**

- *Deadly Arsenals*, Appendix B (BWC)

**Optional Reading:**

- Mark Wheelis and Malcolm Dando “On the Brink: Biodefence, Biotechnology and the Future of Weapons Control,” *The CBW Conventions Bulletin*, December 2008, no 58, pp 3-7, <http://www.fas.harvard.edu/~hsp/bulletin/cbwcb58.pdf>

## WEEK 10

19 & 21 October

WMD Destruction Programs

Libya & Syria

### Required Reading:

- Sharon Squassoni, “Disarming Libya: Weapons of Mass Destruction,” Congressional Research Service, 22 September 2006, <https://www.everycrsreport.com/reports/RS21823.html>
- Mary Beth D. Nikitin, “Syria’s Chemical Weapons: Continuing Challenges,” Congressional Research Service, 11 October 2017, <https://crsreports.congress.gov/product/pdf/IN/IN10771>
- Mary Beth D. Nikitin, “Resurgence of Chemical Weapons Use: Issues for Congress,” 24 July 2018, <https://crsreports.congress.gov/product/pdf/IN/IN10936>
- Ambassador Kenneth Ward, Remarks at the Fourth Special Session of the Conference of States Parties to Review the Operation of the Chemical Weapons Convention (REVCON IV), 22 November 2018, <https://www.state.gov/remarks-at-the-fourth-special-session-of-the-conference-of-the-states-parties-to-review-the-operation-of-the-chemical-weapons-convention-revcon-iv/>

### Optional Reading:

- M.E. Kosal, “Chemical Weapons Destruction and the Public Response,” in *Towards the Elimination of the Chemical Weapons*, Haru, E. and Thakur, R. eds., UN University Press, Netherlands, 2006, pp 118-149.
- Albert J. Mauroni, “Eliminating Syria’s Chemical Weapons,” U.S. Air Force, Center for Unconventional Weapons Studies, Future Warfare Series. No. 58. June 2017, <https://media.defense.gov/2019/Apr/11/2002115522/-1/-1/0/58ELIMINATINGSYRIACW.PDF>
- John Hart, “The Smoking Gun of Non-Compliance,” *CBRNe World*, December 2015, pp 17-20, [http://www.cbrneworld.com/uploads/download\\_magazines/Syrias\\_Review\\_2015.pdf](http://www.cbrneworld.com/uploads/download_magazines/Syrias_Review_2015.pdf)
- Geoffrey Chapman, Hassan Elbahtimy, & Susan B. Martin, “The Future of Chemical Weapons: Implications from the Syrian Civil War,” *Security Studies*, 27:4 (2018): pp 704-733. <https://doi.org/10.1080/09636412.2018.1483640>
- Karim Makdisi & Coralie Pison Hindawi, “The Syrian Chemical Weapons Disarmament Process in Context: Narratives of Coercion, Consent, and Everything in Between,” *Third World Quarterly*, 38:8, 2017, pp 1691-1709, <https://doi.org/10.1080/01436597.2017.1322462>

## WEEK 11

26 October

**Analytical Essays #2 due NLT Monday, 26 October 12:15PM**

28 October

<catch-up day>

## **WEEK 12**

2 & 4 November

Biological Weapons – terrorism from Aum Shinrikyo to Amerithrax  
US policy responses to proliferation concerns and the terrorist threat of WMD  
Dark Winter & Atlantic Storm table-top exercises  
DHS TOPOFF Full-scale exercises

### **Required Reading:**

- *Toxic Terror*, Chapters 7, 8, 10, & 13
- FoxNews.com, “Smallpox Attack Exaggerated,” 10 July 2003,  
<https://www.foxnews.com/story/smallpox-attack-exaggerated>
- Martin Enserink, “How Devastating Would a Smallpox Attack Really Be?” *Science*, 31 May 2002, vol 296, pp 1592-1595,  
<http://www.sciencemag.org/cgi/content/summary/296/5573/1592>

### **Optional Reading:**

- OTA, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA 1993), chapter 3, “Technical Aspects of Biological Weapon Proliferation, pp 71-117,  
<http://www.fas.org/spp/starwars/ota/934405.pdf>
- Tara O’Toole, Michael Mair, and Thomas Inglesby, “Shining Light on ‘Dark Winter,’” *Clinical Infectious Diseases*, April 2002, vol 34, pp 972-983,  
<https://www.centerforhealthsecurity.org/our-work/publications/shining-light-on-dark-winter>
- Jennifer Brower, Peter Chalk, “The Global Threat of New and Reemerging Infectious Diseases: Reconciling U.S. National Security and Public Health Policy,” 2003, RAND, Santa Monica,  
[http://www.rand.org/pubs/monograph\\_reports/MR1602/index.html](http://www.rand.org/pubs/monograph_reports/MR1602/index.html)

## **WEEK 13**

9 & 11 November

Missiles & Delivery Vehicles  
DPRK  
Space Weapons

### **Required Readings:**

- *Deadly Arsenals*, Chapters 5 & 17
- Paul Kerr, “Nuclear, Biological, and Chemical Weapons and Missiles: Status and Trends,” Congressional Research Service, 20 February 2008,  
<http://www.fas.org/sgp/crs/nuke/RL30699.pdf>

- Paul K. Kerr, Steven A. Hildreth, & Mary Beth D. Nikitin, “Iran-North Korea-Syria Ballistic Missile and Nuclear Cooperation,” Congressional Research Service, 14 July 2016, <https://www.everycrsreport.com/reports/R43480.html>
- Nick Schwellenbach, “EMPTyThreat?” *Bulletin of the Atomic Scientists*, September 2005, vol 61 no 5, pp 50-57, <http://bos.sagepub.com/content/61/5/50.full>
- Joseph N. Pelton, “Space Weapons, the Threat of War in Space and Planetary Defense,” in *Space 2.0*, 2019, pp 115-128, [https://link.springer.com/chapter/10.1007/978-3-030-15281-9\\_9](https://link.springer.com/chapter/10.1007/978-3-030-15281-9_9)

**Browse:**

- Federation of American Scientists (FAS) Weapons in Space website: <http://www.fas.org/programs/ssp/man/spacewpnsmain.html>

**Optional Reading:**

- OTA, *Technologies Underlying Weapons of Mass Destruction* (Washington, DC: OTA 1993), chapter 5, “The Proliferation of Delivery Systems,” pp 197-255, <https://ota.fas.org/reports/9344.pdf>
- Electromagnetic Pulse (EMP) Commission Report, 2007, <http://www.empcommission.org/docs/A2473-EMP Commission-7MB.pdf>

**WEEK 14**

16 & 18 November

Future WMD

Emerging technologies: synthetic biology, nanotechnology, and more!

**Required Reading:**

- 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,” <https://www.dni.gov/files/documents/SASC Unclassified 2016 ATA SFR FINAL.pdf>
- Central Intelligence Agency, Directorate of Intelligence, “The Darker Bioweapons Future,” OTI SF 2003-108, 3 November 2003, <http://www.fas.org/irp/cia/product/bw1103.pdf>
- Margaret E. Kosal, “The CWMD Strategy Gap,” *PRISM*, July 2018, <https://cco.ndu.edu/News/Article/1507402/the-cwmd-strategy-gap/>
- Margaret E. Kosal, “Is Small Scary? Nanotechnology Research in an Age of Terrorism,” *Bulletin of Atomic Scientists*, September/October 2004, vol 60, pp 38-47, <https://journals.sagepub.com/doi/full/10.2968/060005012>

**Optional Reading:**

- Diane DiEuliis, Andrew D. Ellington, Gigi Kwik Gronvall, & Michael J. Imperiale, “Does Biotechnology Pose New Catastrophic Risks?” in *Global Catastrophic Biological Risks*, 2019, pp 107-119, [https://link.springer.com/chapter/10.1007/82\\_2019\\_177](https://link.springer.com/chapter/10.1007/82_2019_177)

- Keir A. Lieber & Daryl G. Press, “The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence,” *International Security*, Spring 2017, pp 9-49, <https://www.belfercenter.org/publication/new-era-counterforce-technological-change-and-future-nuclear-deterrence>
- Christopher Chyba and Alex Greninger (*who was a political science undergrad at the time he co-authored the article*), “Biotechnology and Bioterrorism: An Unprecedented World,” *Survival*, January 2004, vol 46, pp 143-162, [http://cisac.stanford.edu/publications/biotechnology\\_and\\_bioterrorism\\_an\\_unprecedented\\_world/](http://cisac.stanford.edu/publications/biotechnology_and_bioterrorism_an_unprecedented_world/)
- James B. Petro, Theodore R. Plasse, and Jack A. McNulty, “Biotechnology: Impact on Biological Warfare and Biodefense,” *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 2003, vol 1, pp 161-168, <http://online.liebertpub.com/doi/abs/10.1089/153871303769201815>

## **Week 15**

23 November

Wrap up & review

***Analytical Essays #3 due NLT Friday, 4 December 2:10 PM***

*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*