A Non-Technical Introduction to Cyber Policy
INTA 689

Fall 2020
Tuesdays 1330 - 1620
1041 Allen Building

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Course Description

The implications of cyber-enabled systems cross-cuts a diverse set of policy and public administration domains. This course provides non-technical students with a working understanding of cyber-enabled systems and their impact on policy and public administration tasks and processes. This introductory course will equip students with the skills and analytic frameworks necessary to effectively address the benefits and risks of cyber-enabled systems.

Course Prerequisites

There are no prerequisites for this course.

Special Course Designation

This course is what Texas A&M and the Bush School refer to as a "W" course for "writing intensive." In addition to the substance of the course, this course will also help you hone your critical thinking skills and the skills necessary to write effective, objective, evidence-based policy analyses and memos. These skills will be stressed in the evaluation of your policy research project.

Course Learning Outcomes

The learning objectives described below represent concepts and ways of thinking you come away from after this course. They also represent the what you will be evaluated on overall as the course proceeds. You are expected to have an understanding of the high-level concepts outlined below, using your policy research project to begin developing your expertise in a particular domain (or set of domains!) of cyber policy and cybersecurity. Below, these concepts are highlighted in terms of the *substantive* concepts you are expected to master, and how you will be *evaluated* (such as in class discussions, presentations, or written assignments such as the midterm and your policy research project). *Specific learning objectives for each assignment can be found in the Assignments section of this syllabus.*

Cyber Policy and Cybersecurity

Each of these learning objectives will be evaluated in terms of

1. how accurately you articulate the key concepts and issues at play, highlighting the current debates and
2. how effectively and appropriately you use these concepts in discussions, class presentations, the midterm, and your policy research project.

The substantive learning objectives for this course are to:

- understand and critically evaluate the role of transnationalism in the context of cyber policy and cybersecurity in class discussions and written assignments
- evaluate the changing capabilities and capacities of state and non-state actors relative to managing the Internet's infrastructure, and their implications for cyber policy and cybersecurity in class discussions and your policy research project
- evaluate the current debate on Internet "consolidation" using both the Internet Society's notion of Internet invariants and Zittrain's notion of generativity
- have a familiarity with the rough mechanics of the Internet's infrastructure and how it functions as a "network of (largely) private networks" and be able to use this analytically in class discussions and written assignment, in particular in the midterm
- describe the diverse institutional landscape that makes up the cyber regime complext, distinguishing between cyber norms, the cyber regime complex, and evaluating the implications for coalition building, in particular applying these concepts in your policy research project
- define the attribution problem and the challenges of the "Internet jurisdiction" problem as a fundamental challenge to international cyber policy and cybersecurity, evaluated in particular in your midterm essay on this topic
- describe and evaluate the early and modern network neutrality debate, from the context of how traffic moves across the Internet, and notions of access (the digital divide) and innovation, evaluated in terms of class discussion and a midterm essay question, and as appropriate for policy research projects
- understand the fundamentals of encryption, then contrast the arguments in the recent "going dark" debate, in particular their implications for national security, surveillance, and freedom of speech in class discussion, a midterm question, and as appropriate in policy research projects
- describe the role and challenges of Internet infrastructure development in terms of its contribution to public, private, and social goods in class discussion and as appropriate for policy research projects
- understand and evaluate the implications of Internet communication for privacy, the potential for censorship, and human rights in class discussions and written assignments
- distinguish between various forms of fake news and disinformation, in particular from the perspective of the incentives of actors to engage in disinformation and the capabilities and capacities of both state and non-state actors in class discussions and as appropriate to your policy research project
- describe the basic political economy of cybersecurity and the collaborative challenges to mitigating and remediating transnational cybercrime in class discussions and as appropriate to policy research projects
- evaluate international efforts to develop norms around cyberwarfare, the debates around developing effective statecraft, and how the notions of deterrence and coercion differ in the context of cyber operations in class discussions and as appropriate for policy research projects

Writing

The focus of the writing learning objectives is to develop systematic strategies for critically evaluating a policy issue, then conveying a balanced analysis and recommendations. These learning objectives will be stressed in each of the course assignments. The overall learning objectives for the writing portion of this course are to:

- succinctly *summarize* a cyber policy or security issue for a policy or intelligence audience
- critically evaluate credible options in an unbiased way, presenting the audience with a balanced view of the issues, potential solutions, and implications
- narrow a broad issue (such as encryption) to a tractable issue salient to policy makers or the intelligence community
- effectively use evidence from the literature, government and industry reports, and the media to effectively support articulations of solutions and recommendations
- effectively use detailed outlines to identify which background concepts contribute to the narrower argument and how these will be used as the connective logic in analyses and recommendations
- effectively use detailed outlines to develop the articulation of an argument, in particular to evaluate the flow of the argument and differentiate what literature and cases are essential to the overall argument
- use the proposal, detailed outline, and final draft to recognize that the argument and structure will

evolve over multiple iterations and refinements

Textbooks and Resource Materials

Books

There are no textbooks assigned for this course. All of the course materials can be found in the shared Zotero library, described below.

IR Background Readings

While this course focuses on cyber policy, in particular from a neoliberal institutionalist perspective, the course will draw on some of the core concepts in international relations. The following provides some core readings that international affairs students are expected to be familiar with. You do not have to go read each word-for-word, but you should be familiar with the key ideas.

Finnemore, Martha and Kathryn Sikkink (1998). “International Norm Dynamics and Political Change’ ’. In: *International Organization* 52.4. http://www.jstor.org/stable/2601361, pp. 887–917.

Gourevitch, Peter (1978). “The Second Image Reversed: The International Sources of Domestic Politics’ ’. In: *International Organization* 32.4, pp. 881–912. DOI: 10.1017/S002081830003201X.

Haas, Peter M. (1992). “Introduction: Epistemic Communities and International Policy Coordination’ ’. In: *International Organization* 46.1, pp. 1–35. DOI: 10.1017/S0020818300001442.

Keohane, Robert O. (1984). *After Hegemony: Cooperation and Discord in the World Political Economy.* Princeton, New Jersey: Princeton University Press.

——— (2011). “Global Governance and Legitimacy’ ’. In: *Review of International Political Economy* 18.1, pp. 99–109.

Keohane, Robert and Jr Joseph S. Nye (2001). “Between Centralization and Fragmentation: The Club Model of Multilateral Cooperation and Problems of Democratic Legitimacy’ ’. In: *SSRN eLibrary.*

Koremenos, Barbara, Charles Lipson, and Duncan Snidal (2001). “The Rational Design of International Institutions’ ’. In: *International Organization* 55.4. http://www.jstor.org/stable/3078615, pp. 761–799.

Krasner, Stephen D. (1982). “Structural Causes and Regime Consequences: Regimes as Intervening Variables’ ’. In: *International Organization* 36.2. http://www.jstor.org/stable/2706520, pp. 185–205.

——— (1983). *International Regimes.* 1st edition. Ithaca, NY: Cornell University Press.

Lake, David A., Lisa L. Martin, and Thomas Risse (2021). “Challenges to the Liberal Order: Reflections on *International Organization*’ ’. In: *International Organization* 75.2, pp. 225–257. DOI: 10.1017/S0020818320000636.

March, James G. and Johan P. Olsen (1998). “The Institutional Dynamics of International Political Orders’ ’. In: *International Organization* 52.4. http://www.jstor.org/stable/2601363, pp. 943–969.

Nye, Joseph S. and Robert O. Keohane (1971). “Transnational Relations and World Politics: An Introduction.’ ’ In: *International Organization* 25.3, pp. 329–349.

Ruggie, J.G. (1993). “Territoriality and beyond: Problematizing Modernity in International Relations’ ’. In: *International Organization* 47.1, pp. 139–174.

Ruggie, John Gerard (1992). “Multilateralism: The Anatomy of an Institution’ ’. In: *International Organization* 46.3. http://www.jstor.org/stable/2706989, pp. 561–598.

Waltz, Kenneth N. (2001). *Man, the State, and War: A Theoretical Analysis.* Second. https://www.jstor.org/stable/10.7312/walt12537. Columbia University Press.

Course Tools

The following provides an introduction to Zotero and Turnitin, our two primary course tools.

Zotero

We will be using Zotero to access course materials and to manage the references used in their course assignments. Students can find any of the materials listed on this syllabus in the shared Zotero library for this course. These materials include journal articles, conference papers, newspaper and magazine articles, **lecture slides**, and **the most up-to-date version of this syllabus**. Dr. Sowell will be sending invitations to the Zotero shared library after the first lecture, the afternoon of Tuesday 31 August 2021. If the student has not received an invitation to the shared library, check your spam folder. If the student still cannot find the invitation, e-mail Dr. Sowell (jsowell@tamu.edu).

The first step to using Zotero is to create a Zotero account. Students can download the Zotero app at https://www.zotero.org/download/. Students should also install the Zotero Connector for the browser of their choice. For step-by-step instructions, see the section on Zotero Configuration in the Appendix. Word processor plugins are available for Word, LibreOffice, and Google Docs.

TAMU libraries offers extensive documentation and tutorials on using Zotero. Please see:

- TAMU Zotero Research Guide
- Creating Bibliographies, in particular, the *two-minute* video that shows how to insert in-text citations into a Word document and how to generate bibliographies.
- The *less than two-minute* quick guide video for saving citations from your web browser

It should take less than 30 minutes to get the Zotero app and connector installed, setup, and then run through the two video guides. This will save you many more hours fiddling with references when writing your policy research projects.

Lecture slides will be added to the shared library at latest one hour before each class. The syllabus and class readings will be periodically updated with contemporary readings from the news related to upcoming topics in the course. To ensure you have the latest syllabus, it is strongly suggested that you open the syllabus directly from Zotero.

To be clear on the locations of these materials:

- the latest syllabus can always be found in the directory `INTA 689 - Cyber Policy/Syllabus` (Zotero calls directories *collections*) of the shared library
- slides will be in the collection `INTA 689 - Cyber Policy/Classes/ClassXX/Slides` where `XX` is the class number (01, 08, 12, etc.)
- references in slides that are not from one of the assigned books or one of the readings lists, can also be found in the `Slides` collection for that lecture

Two immediate points on using Zotero:

1. ***Become familiar with and use the Zotero app.*** You really only need the web interface to setup your account, setup your project library, and invite Dr. Sowell to your project library. After that, the bulk of your work will be ***in the Zotero app.***
2. ***Make sure to regularly refresh your Zotero libraries*** using the little green arrow in the upper right of the Zotero app. This ensures that all of *your* material is sync'd so Dr. Sowell can see it and help you where necessary, and it makes sure you have the latest course materials, including the latest version of this delightful document (the syllabus).

Please contact Dr. Sowell (jsowell@tamu.edu) if you have any problems accessing Zotero or the class materials in the shared library `INTA 689 - Cyber Policy`.

Project Deliverables via Turnitin

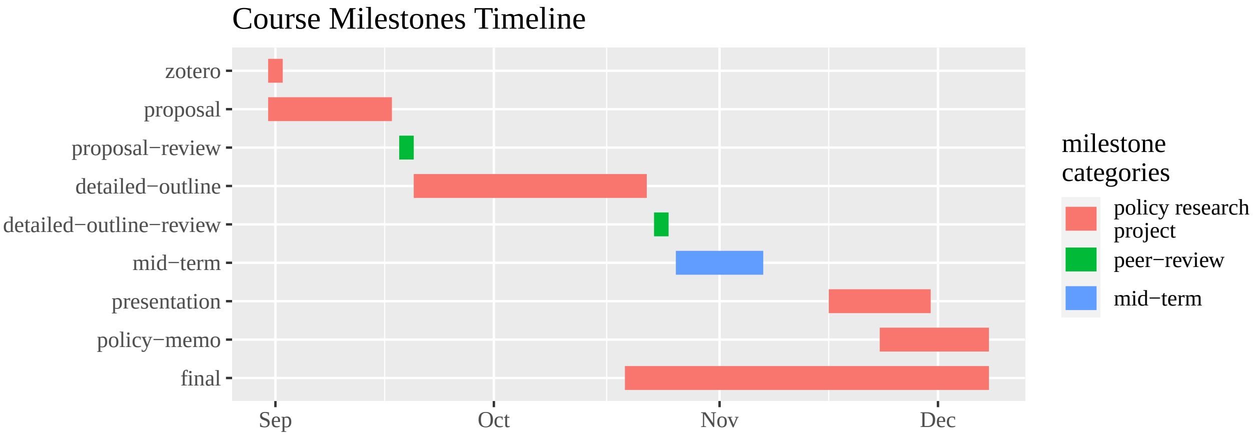
Policy research project milestones, the midterm, and presentation deliverables will be turned in via Turnitin. These will be due **at or before 2359 on the assignment due date**. Dr. Sowell will send invites to students' `@tamu.edu` e-mail addresses after the first lecture. Specific instructions for assignment deliverables are described along with the corresponding assignment.

Grading and Overview of Assignments

Details and guidelines for each assignment are provided in Assignments. Assignments contribute to your final grade as follows:

1. participation, 10%, *4* points of which is writing a peer review
2. one presentations of class readings by students, 10%
3. one policy memo on policy research project, 10%, due **Wednesday 08 December 2021** along with final draft of policy research project
4. take-home mid-term, 20%, distributed **Tuesday 26 October 2021** and due **at or before 2359 on Sunday 07 November 2021**.
5. policy research project (total 50%) and peer reviews (total 4% of participation), breakdown:
   - setup shared policy research project library in Zotero, 3 participation points, due Thursday 02 September 2021
   - proposal, 10%, due Friday 17 September 2021
   - proposal peer review, 2%, due Monday 20 September 2021
   - detailed outline, 15%, due Friday 22 October 2021
   - detailed outline peer review, 2%, due Monday 25 October 2021
   - in class presentation, 5%, due Tuesday 30 November 2021
   - final project report, 20%, due Wednesday 08 December 2021

Grades for assignments will be in terms of total points for the class. For instance, a perfect grade for a presentation of class readings would be 10/10.



After the midterm and a couple of weeks before the final you will get a grade report summarizing your grades and the class grade distribution.

Final letter grades will be assigned as follows:

letter grade	range
A	> 90%
B	>= 80%, < 90%
C	>= 70%, < 80%
F	< 70%

In terms of evaluation, grades for written assignments (within the scope of the assignment) are assessed as follows:

- **A+, >= 96%** indicates
  - exceptional mastery of concepts at hand,
  - exceptional application of the concepts,
  - salient issues and concepts covered in the class are addressed,
  - appropriate trade-offs are discussed,
  - analysis is supplemented by contemporary instances of the problem from outside materials,
  - exceptional articulation, with an introduction to the problem, challenges, trade-offs, and recommendations where requested
- **A, >= 90%, <96%** indicates
  - accurate articulation of concepts at hand,
  - effective applicatin of the concepts,
  - *most* salient issues and concepts covered in the class are addressed,
  - appropriate trade-offs are discussed,
  - good articulation of the analysis with an introduction to the problem, challenges, trade-offs, and recommendations where requested
- **B, >= 80%, < 90%** indicates
  - accurate articulation of the concepts at hand,
  - effective application of the concepts,
  - only *some* key issues and concepts related the problem at hand are presented,
  - some trade-offs discussed in class are missing,
  - weak articulation of analysis, has only rudimentary introduction to the problem, challenges, trade-offs, and recommendations where requested
- **C, >= 70%, < 80%** indicates
  - inaccurate articulation of the concepts at hand,
  - weak or unclear application of the concepts,
  - significant key issues and concepts related to the problem at hand are missing or misconstrued,
  - limited discussion of trade-offs,
  - poor articulation of analysis, does not have a clear introduction to the problem, challenges, trade-offs, and recommendations where requested
- **F, < 70%** indicates
  - inaccurate representation of the concepts at hand,
  - little to no application of the concepts,
  - signifiant number of the key issues and concepts related to the problem at hand are missing or misconstrued,
  - very little discussion of trade-offs or single-sided,
  - writing is unclear and unstructured

Late Work Policy

Enforcement of the following late work policy is at the discretion of the instructor.

As noted in the discussion of Turnitin, *all assignments for this class are due at or before 2359 on the due date for the assignment.* **Late submissions will incur a penalty of 10% per day after the due date.** For instance, if the assignment is due on Monday and it is submitted via Turnitin on Wednesday, a 20% late penalty will be applied. *Assignments submitted on or after the tenth day after the deadline will receive zero points and will not be graded.*

Ideally, everyone plans ahead and gets work done ahead of time. That said, every student gets one *late submission mulligan.* Everyone gets behind at some point or finds they have several deliverables due at the same time and needs a little slack. If you see yourself heading for this situation, to use your mulligan you must e-mail the instructor *at least 24 hours before the deadline* to indicate you would like to take your mulligan, explain why, and when you think you can submit the work. The instructor will work with you to identify a reasonable revised deadline. You will likely get a day or two more time, a week is unacceptable with the exception of dire circumstances. *Like the overall late policy, the mulligan is also at the discretion of the instructor, so please do not abuse this generous option.*

Lectures and Readings

All journal articles, papers, newspaper articles, and other documents assigned in the reading lists below can be found in the shared Zotero library for this course. Lecture slides will be added to the appropriate Zotero shared folder at latest one hour before class.

For any given class there will be at most four readings lists:

- **Essential Readings** are the *required* readings from the textbooks and course materials.
- **Contemporary Readings** are *strongly recommended* after reading the essential readings.
- **Optional Readings** are *not required.* These readings may be referenced in lectures. Optional readings may also be useful starting points for policy research project research.
- **Technical References** are *not required.* These are the references Dr. Sowell draws on for describing and explaining particular elements of the Internet's function or issue areas.

Unless specific sections or page numbers are specified in text below the reference for the reading material, you are expected to read the entire document.

Class #01: Tuesday 31 August 2021

Overview of Cyber Policy

Cyber Policy covers a broad range of topics from infrastructure development, privacy, access rights, disinformation campaigns, and cyberwarfare. In this lecture we will survey the topics we will discuss in the course, highlighting the differences between policy issues that play out *on* the Internet versus policy issues *in* the Internet. We will conclude with a discussion of the distribution of capabilities and capacity amongst state and non-state actors: what combinations of these actors have the right tools to effectively manage cyber policy issues?

Part I: Foundations

Class #02: Tuesday 07 September 2021

The User Experience

The end user's Internet experience has evolved substantively since the inception of the Internet. In this lecture, we will take a brief look at this evolution in terms of the changes in capabilities—from static websites to complex online web applications to "app" based services on phones and tablets and on to the emerging market of Internet of Things devices. At each inflection point we will describe, explain, and evaluate how new threats have emerged, how effectively they have been countered, and emerging challenges (such as IoT botnets and crimeware as a service). The lecture will conclude by transitioning through the user's view of the architecture—the Internet has been lauded as an architecture of innovation, but will it (or has it already) evolved into an architecture of vulnerabilitiy and/or control?

Essential Readings

- **Nye, Joseph S. and Robert O. Keohane (1971). "Transnational Relations and World Politics: An Introduction.'' In: *International Organization* 25.3, pp. 329–349.**

  This is an IR classic, you will see shades of transnationalism in the discussion of the cyber regime complex and in discussions of non-state institutions throughout the course.

- **Internet Society (2019). *Internet Society Global Internet Report 2019: Consolidation in the Internet Economy.* https://future.internetsociety.org/2019/wp-content/uploads/sites/2/2019/04/InternetSociety-GlobalInternetReport-ConsolidationintheInternetEconomy.pdf. Reston, VA: Internet Society.**

  Read Chapters 1–8.

  Pay close attention to the implications of consolidation for end users, such as the Facebook Basics program. Also note the distinct tone of stewardship of the Internet.

- **Zittrain, Jonathan L. (2006). "The Generative Internet' ". In: *Harvard Law Journal* 119.**

  Read Sections I and II, pp. 1975–1996.

  The notion of generativity is considered on of the key factors contributing to the Internet as a economic and innovation engine. Make special note of the characteristics of 'ease of mastery' and 'accessibility'

- **Keohane, Robert O. and David G. Victor (2011). "The Regime Complex for Climate Change' ". In: *Perspectives on Politics* 9.1. http://www.jstor.org/stable/41622723, pp. 7–23.**

  In reading this article, pay special attention to the characteristics of a regime complex, in particular the ideas around policy experiments by like-minded actors and epistemic quality. We will be coming back to these qualities, and the characteristics of a regime complex writ broadly, through the semester.

- **Nye, Joseph (2014). "The Regime Complex for Managing Global Cyber Activities' ". In: *Global Commission on Internet Governance* PAPER SERIES: NO. 1. https://dash.harvard.edu/bitstream/handle/1/12308565/Nye-GlobalCommission.pdf.**

  Nye's regime complex illustrates the diversity of actors *interested* in the cyber policy endeavor. That said, as we will discuss at a high level here, and see through the remainder of the course, not all of these actors have the capabilities and capacity to actually influence the rules of the game, or the platforms and infrastructure that make up the web, online platforms, and/or the Internet.

- **Sowell, Jesse H. (2020). "Evaluating Competition in the Internet's Infrastructure: A View of GAFAM from the Internet Exchanges' ". In: *Journal of Cyber Policy* 5.1, pp. 107–139. DOI: 10.1080/23738871.2020.1754443.**

  Along with the ISOC report above, this artilce illustrates the diversity of governance configurations across the function-specific institutions that manage platforms and infrastructures in the Internet. Here in particular we seemingly the same actors (large tech firms) participating in very different forms of governance. One question we will address in discussion is whether they are actually behaving differently and why.

Contemporary Readings

- **Couturier, Kelly (2015). "How Europe Is Going After Apple, Google and Other U.S. Tech Giants' ". In: *The New York Times.* https://www.nytimes.com/interactive/2015/04/13/technology/how-europe-is-going-after-us-tech-giants.html.**

- **Smith, Noah "Big Tech Sets Up a 'Kill Zone' for Industry Upstarts' ". In: *Bloomberg.com.* https://www.bloomberg.com/opinion/articles/2018-11-07/big-tech-sets-up-a-kill-zone-for-industry-upstarts.**

- **The Economist (2018). "American Tech Giants Are Making Life Tough for Startups' ". In: *The Economist.* https://www.economist.com/business/2018/06/02/american-tech-giants-are-making-life-tough-for-startups.**

- **Swisher, Kara (2019). "Opinion | Taming the Apex Predators of Tech' ". In: *The New York Times.* https://www.nytimes.com/2019/05/21/opinion/facebook-google-monopolies.html.**

- **Wheeler, Tom (2019).** ***Should Big Technology Companies Break up or Break Open?*** **https://www.brookings.edu/blog/techtank/2019/04/11/should-big-technology-companies-break-up-or-break-open/.**

Optional Readings

- **Daigle, Leslie (2019).** ***The Internet Invariants: The Properties Are Constant, Even as the Internet Is Changing.*** **https://www.thinkingcat.com/wordpress/2019-invariantsupdated/. Internet Society, p. 81.**

  This is a more nuanced articulation of the Internet invariants by one of the original architects of the work. Of particular interest is the historical context provided for each.

- **Khan, Lina M (2017). "Amazon's Antitrust Paradox''. In:** ***The Yale Law Journal*** **126.3, pp. 710–805.**

- **Khan, Lina M. (2019). "The Separation of Platforms and Commerce''. In:** ***Columbia Law Review*** **119.4. https://www.jstor.org/stable/26632275, pp. 973–1098.**

- **Zittrain, Jonathan L. (2008).** ***The Future of the Internet–And How to Stop It.*** **Yale University Press.**

  This is the book version of Zittrain's article above. Fun fact: Zittrain said if he wrote a sequel it would be entitled "Meh, We Tried"

Class #03: Tuesday 14 September 2021

Mapping the Internet

Picking up with our discussion of the implications of the architecture for the end user, we will peel back the application layer and explore the underlying network that delivers the end user's experience. The *Inter*net is really a diverse network of (largely) private networks. We will visually explore how elements of this highly distributed infrastructure are interconnected, the notion of best effort service, how certain protocols serve as the "glue" that ensure effective coordination amongst networks based in many different economies. We will conclude by highlighting the fundamentally transnational character of the communication infrastructure, dispelling the conventional International relations argument that technical issues are simple coordination problems.

Essential Readings

- **Internet Society (2019).** ***Internet Society Global Internet Report 2019: Consolidation in the Internet Economy.*** **https://future.internetsociety.org/2019/wp-content/uploads/sites/2/2019/04/InternetSociety-GlobalInternetReport-ConsolidationintheInternetEconomy.pdf. Reston, VA: Internet Society.**

  Revisit the discussions of the Internet's infrastructure.

Contemporary Readings

- **Dorman, Bob (2016).** ***How the Internet Works: Submarine Fiber, Brains in Jars, and Coaxial Cables.*** **https://arstechnica.com/information-technology/2016/05/how-the-internet-works-submarine-cables-data-centres-last-mile/.**

- **Satariano, Adam, Karl Russell, Troy Griggs, Blacki Migliozzi, and Chang W. Lee (2019). "How the Internet Travels Across Oceans''. In:** ***The New York Times.*** **https://www.nytimes.com/interactive/2019/03/10/technology/internet-cables-oceans.html.**

Technical Readings

- **Faratin, Peyman, David Clark, Steven Bauer, William Lehr, Patrick Gilmore, and Arthur Berger (2008). "The Growing Complexity of Internet Interconnection''. In: *Communications and Strategies*. http://ezproxy.library.tamu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eoh&AN=1095251&site=eds-live, pp. 51–71.**
- **Clark, David D., William Lehr, and Steven Bauer (2011). *Interconnection in the Internet: The Policy Challenge*. SSRN Scholarly Paper ID 1992641. https://papers.ssrn.com/abstract=1992641. Rochester, NY: Social Science Research Network.**

Class #04: Tuesday 21 September 2021

The Institutional Landscape

Now that we have a working map of the Internet, we will turn to mapping the constellation of transnational, non-state institutions that ensure the Internet remains connected in a secure and stable way. Since the NSF divested itself of its role managing the Internet's infrastructure, the engineers and operators now managing the infrastructure had to find governance solutions for managing a decentralized, transnational infrastructure. We will describe, explain, and evaluate the decentralized constellation of transnational, yet function-specific institutions that manage critical Internet resources. Thus far, the interests of these institutions have aligned with the public interest, but, to ensure this continues, we need to improve the lines of communications between these institutions and state actors.

Essential Readings

- **Choucri, Nazli and David D. Clark (2013). "Who Controls Cyberspace?'' In: *Bulletin of the Atomic Scientists* 69.5, pp. 21–31. DOI: 10.1177/0096340213501370.**
- **Eeten, Michel JG van and Milton Mueller (2013). "Where Is the Governance in Internet Governance?'' In: *New Media & Society* 15.5, pp. 720–736. DOI: 10.1177/1461444812462850.**
- **Henriksen, Anders (2019). "The End of the Road for the UN GGE Process: The Future Regulation of Cyberspace''. In: *Journal of Cybersecurity* 5.1. DOI: 10.1093/cybsec/tyy009.**

Contemporary Readings

- **Bund, Jakob and Patryk Pawlak (2017). "Minilateralism and Norms in Cyberspace''. In: *European Union Institute for Security Studies*.**
- **Sukumar, Arun M. (2017). *The UN GGE Failed. Is International Law in Cyberspace Doomed As Well?* https://www.lawfareblog.com/un-gge-failed-international-law-cyberspace-doomed-well.**
- **Maurer, Tim and Kathryn Taylor (2018). *Outlook on International Cyber Norms: Three Avenues for Future Progress*. https://carnegieendowment.org/2018/03/02/outlook-on-international-cyber-norms-three-avenues-for-future-progress-pub-75704.**

Optional Readings

- **Finnemore, Martha and Duncan B. Hollis (2016). "Constructing Norms for Global Cybersecurity''. In: *American Journal of International Law* 110.3, pp. 425–479. DOI: 10.1017/S0002930000016894.**
- **Mueller, Milton, Andreas Schmidt, and Brenden Kuerbis (2013). "Internet Security and Networked Governance in International Relations''. In: *International Studies Review* 15.1, p. 86. DOI: 10.1111/misr.12024.**

- **Mueller, Milton L. (2010).** ***Networks and States: The Global Politics of Internet Governance.*** **The MIT Press.**
- **Mueller, Milton (2002).** ***Ruling the Root.*** **Cambridge, MA: The MIT Press.**
- **Goldsmith, Jack and Tim Wu (2008).** ***Who Controls the Internet?: Illusions of a Borderless World.*** **1s edition. New York: Oxford University Press.**
- **Tikk, Eneken and Mika Kerttunen (2017).** ***The Alleged Demise of the UN GGE: An Autopsy and Eulogy.*** **Cyber Policy Institute.**
- **Diplomat The, Elaine Korzak (2017).** ***UN GGE on Cybersecurity: The End of an Era?*** **https://thediplomat.com/2017/07/un-gge-on-cybersecurity-have-china-and-russia-just-made-cyberspace-less-safe/.**
- **Soesanto, Stefan and Fosca D'Incau (2017).** ***The UN GGE Is Dead: Time to Fall Forward.*** **https://www.ecfr.eu/article/commentary_time_to_fall_forward_on_cyber_governance.**
- **Grigsby, Alex (2017).** ***The Year in Review: The Death of the UN GGE Process?*** **https://www.cfr.org/blog/year-review-death-un-gge-process.**

Class #05: Tuesday 28 September 2021

Attribution and "Internet Jurisdiction"

Attribution and jurisdiction problems confound a number of transnational issues that play out in and on the Internet. In a decentralized Internet, assigning attribution for a given set of actions (such as whether a particular individual viewed a given webpage at a certain time, or who is responsible for the latest DDoS attack) is very difficult (some have argued impossible). The global, yet decentralized character of the Internet also creates jurisdiction conflicts. For instance, online services produced in one jurisdiction may be illegal in others. In other cases, such as online attacks that rely on (illicitly appropriated) resources distributed across many jurisdictions, create substantive coordination and collaboration problems amongst both private cybersecurity actors and law enforcement. In this lecture, we will review a number of the seminal cases that highlight the challenges of attribution and jurisdiction conflicts, describing which aspects of these these problems have working solutions and which remain challenging.

Essential Readings

- **Johnson, David R. and David G. Post (1996). "Law and Borders - the Rise of Law in Cyberspace''. In:** ***Stanford Law Review*** **48. https://papers.ssrn.com/abstract=535.**
- **Reidenberg, Joel R. (2005). "Technology and Internet Jurisdiction''. In:** ***University of Pennsylvania Law Review*** **153.6, pp. 1951–1974. DOI: 10.2307/4150653.**
- **Clark, David D. and Susan Landau (2011). "Untangling Attribution''. In:** ***Harvard National Security Journal.*** **https://heinonline.org/HOL/P?h=hein.journals/harvardnsj2&i=531, pp. 323–352.**
- **Lin, Herbert (2016). "Attribution of Malicious Cyber Incidents: From Soup to Nuts''. In:** ***Journal of International Affairs*** **70.1. https://www.jstor.org/stable/90012598, pp. 75–137.**

Optional Readings

- **Zittrain, Jonathan (2005).** ***Jurisdiction.*** **1st edition. Internet Law Series. New York: Foundation Press.**
- **Kohl, Uta (2007).** ***Jurisdiction and the Internet.*** **Cambridge University Press.**

Class #06: Tuesday 05 October 2021

Network Neutrality

Network neutrality is one of the oldest debates in Internet policy. Oversimplifying, the argument is that all traffic on the Internet should be treated equally. In this lecture we will dig into the nuance of the network neutrality debate, highlighting the economic perspective as well as those that incorporate notions of fairness, innovation, and censorship. We will not only look at how the debate has evolved in the US, but also in other economies, such as Singapore, the Netherlands, and elsewhere (also linking this back to some of our core Internet jurisdiction conflicts). As with many things, this debate is fundamentally about economics—we will conclude our discussion by foreshadowing how issues of infrastructure development (in the next lecture) affect network neutrality.

Essential Readings

- **Stover, Christine M. (2010). "Network Neutrality: A Thematic Analysis of Policy Perspectives Across the Globe' '. In: *Global Media Journal, Canadian ed.; Ottawa* 3.1. https://search.proquest.com/docview/888154405/abstract/7C4DD02817A84F03PQ/1, p. n/a.**
- **Wu, Tim (2003). "Network Neutrality, Broadband Discrimination' '. In: *Journal on Telecommunications & High Technology Law* 2. https://heinonline.org/HOL/P?h=hein.journals/jtelhtel2&i=145, pp. 141–176.**
- **Yoo, Christopher S. (2005). "Beyond Network Neutrality' '. In: *Harvard Journal of Law & Technology*. https://heinonline.org/HOL/P?h=hein.journals/hjlt19&i=4, pp. 1–78.**

Contemporary Readings

- **Ruiz, Rebecca R. (2015). "F.C.C. Sets Net Neutrality Rules' '. In: *The New York Times*. https://www.nytimes.com/2015/03/13/technology/fcc-releases-net-neutrality-rules.html.**
- **Ruiz, Rebecca R. and Steve Lohr (2015). "F.C.C. Approves Net Neutrality Rules, Classifying Broadband Internet Service as a Utility' '. In: *The New York Times*. https://www.nytimes.com/2015/02/27/technology/net-neutrality-fcc-vote-internet-utility.html.**
- **Collins, Keith (2018). "Net Neutrality Has Officially Been Repealed. Here's How That Could Affect You.' ' In: *The New York Times*. https://www.nytimes.com/2018/06/11/technology/net-neutrality-repeal.html.**
- **Lapowsky, Issie (2017). "It's Super Hard to Find Humans in the FCC's Net Neutrality Comments' '. In: *Wired*. https://www.wired.com/story/bots-form-letters-humans-fcc-net-neutrality-comments/.**
- **Pruitt, Courtney and Chris Roat (2017). *Bot or Not?: Verifying Public Comments on Net-Neutrality*. https://medium.com/ragtag-notes/bot-or-not-verifying-public-comments-on-net-neutrality-8c77ee54a02e.**
- **Kang, Cecilia (2019). "Net Neutrality Repeal at Stake as Key Court Case Starts' '. In: *The New York Times*. https://www.nytimes.com/2019/02/01/technology/net-neutrality-repeal-case.html.**
- **Condliffe, Jamie (2019). "The Week in Tech: We Might Be Regulating the Web Too Fast' '. In: *The New York Times*. https://www.nytimes.com/2019/04/12/technology/tech-regulation-too-fast.html.**

Optional Readings

- **Yoo, Christopher S. (2008). "Network Neutrality, Consumers, and Innovation Law in a Networked World' '. In: *University of Chicago Legal Forum*. https://heinonline.org/HOL/P?h=hein.journals/uchclf2008&i=181, pp. 179–262.**

- **Wallsten, Scott and Stephanie Hausladen (2009). "Net Neutrality, Unbundling, and Their Effects on International Investment in Next-Generation Networks' '. In: *Review of Network Economics* 8.1. DOI: 10.2202/1446-9022.1171.**
- **Frischmann, Brett M. (2012). *Infrastructure: The Social Value of Shared Resources.* New York, NY, USA: Oxford University Press.**
- **Marsden, Christopher T. (2017). *Network Neutrality: From Policy to Law to Regulation.* Manchester University Press. DOI: 10.26530/OAPEN_622853.**

Class #07: Tuesday 12 October 2021

Reading Week

We will not have class this week. You should use this time to work on your detailed outlines.

Class #08: Tuesday 19 October 2021

Encryption and "Going Dark"

Encryption is the technical response to privacy and surveillance. In simple terms, encryption is the process of obscuring the content of a message. While a seemingly simple process, it has given rise to one of the oldest and most heated debates related to Internet technology. In this lecture, we will review how this debate evolved and its role in the contemporary "going dark" debate. In the first part of this lecture we will provide a high level, nontechnical overview of encryption and cryptography. We will then review the US and other states' attempts at regulating encryption. We will then dive into the "going dark" debate, the arguments that strong encryption, that cannot be broken by state actors, are limiting the abilities of legitimate law enforcement and intelligence agencies to perform investigations. Finally, we will revisit the regulatory discussion, how states are attempting to avoid "going dark," from requiring access to encryption keys, limiting the strength of commercially available encryption, and requiring "backdoors" into commercial security tools. To illustrate, we will review a few cases, in particular the recent standoff between Apple and the US Government.

Essential Readings

- **Swire, Peter P. and Kenesa Ahmad (2012). "Encryption and Globalization' '. In: *The Columbia Science & Technology Law Review* 13.Spring. DOI: 10.2139/ssrn.1960602.**
- **Abelson, Harold, Ross Anderson, Steven M. Bellovin, Josh Benaloh, Matt Blaze, Whitfield Diffie, John Gilmore, Matthew Green, Susan Landau, Peter G. Neumann, Ronald L. Rivest, Jeffrey I. Schiller, Bruce Schneier, Michael A. Specter, and Daniel J. Weitzner (2015). "Keys under Doormats: Mandating Insecurity by Requiring Government Access to All Data and Communications' '. In: *Journal of Cybersecurity* 1.1, pp. 69–79. DOI: 10.1093/cybsec/tyv009.**
- **Swire, Peter (2012). "From Real-Time Intercepts to Stored Records: Why Encryption Drives the Government to Seek Access to the Cloud' '. In: *International Data Privacy Law* 2.4, pp. 200–206. DOI: 10.1093/idpl/ips025.**
- **Swire, Peter and Kenesa Ahmad (2011). *'Going Dark' Versus a 'Golden Age for Surveillance'.* https://fpf.org/wp-content/uploads/Going-Dark-Versus-a-Golden-Age-for-Surveillance-Peter-Swire-and-Kenesa-A.pdf.**
- **Gasser, Urs, Nancy Gertner, Jack L. Goldsmith, Susan Landau, Joseph S. Nye, David O'Brien, Matthew G. Olsen, Daphna Renan, Julian Sanchez, Bruce Schneider, Larry Schwartzol, and Jonathan L. Zittrain (2016). *Don't Panic: Making Progress on the "Going Dark" Debate.* https://dash.harvard.edu/handle/1/28552576.**

- **Pfefferkorn, Riana (2017). *The "Going Dark" Debate: No News Isn't Necessarily Good News.* http://cyberlaw.stanford.edu/blog/2017/07/going-dark-debate-no-news-isn%E2%80%99t-necessarily-good-news.}**

Contemporary Readings

- **Kahn, Matthew (2017). *Deputy Attorney General Rod Rosenstein Remarks on Encryption.* https://www.lawfareblog.com/deputy-attorney-general-rod-rosenstein-remarks-encryption.**
- **Tait, Matt (2017). *Decrypting the Going Dark Debate.* https://www.lawfareblog.com/decrypting-going-dark-debate.**
- **Lichtblau, Eric and Katie Benner (2016). "F.B.I. Director Suggests Bill for iPhone Hacking Topped \$1.3 Million''. In: *The New York Times.* https://www.nytimes.com/2016/04/22/us/politics/fbi-director-suggests-bill-for-iphone-hacking-was-1-3-million.html.**
- **Lichtblau, Eric and Katie Benner (2016). "Apple Fights Order to Unlock San Bernardino Gunman's iPhone''. In: *The New York Times.* https://www.nytimes.com/2016/02/18/technology/apple-timothy-cook-fbi-san-bernardino.html.**
- **Manjoo, Farhad (2016). "Apple's Stance Highlights a More Confrontational Tech Industry''. In: *The New York Times.* https://www.nytimes.com/2016/02/18/technology/apples-stance-highlights-a-more-confrontational-tech-industry.html.**
- **Shear, Michael D., David E. Sanger, and Katie Benner (2016). "In the Apple Case, a Debate Over Data Hits Home''. In: *The New York Times.* https://www.nytimes.com/2016/03/14/technology/in-the-apple-case-a-debate-over-data-hits-home.html.**
- **Markoff, John, Katie Benner, and Brian X. Chen (2016). "Apple Encryption Engineers, If Ordered to Unlock iPhone, Might Resist''. In: *The New York Times.* https://www.nytimes.com/2016/03/18/technology/apple-encryption-engineers-if-ordered-to-unlock-iphone-might-resist.html.**

Part II: Contemporary Issues

Class #09: Tuesday 26 October 2021

Infrastructure Development

In this lecture we dig a little deeper into the economics of Internet infrastructure development, focusing on the power dynamics between large incumbent networks and medium to small networks. In particular, we will further develop the role of the submarine cable networks and Internet exchanges. We will evaluate infrastructure development from three perspectives: the relative costs of each of thes different parts of the infrastructure; the roles they play in local and regional economies; and the vulnerabiliites faced by these infrastructures. We will conclude by looking back at how development processes have shaped the debates we have discussed thus far and foreshadow the role of development in the lectures in the rest of Part II, stressing that, to understand many of these issues, it is necessary to understand how the underlying infrastructure developed and the power dynamics amongst those actors.

Essential Readings

- **Frischmann, Brett M. (2012). *Infrastructure: The Social Value of Shared Resources.* New York, NY, USA: Oxford University Press.**

  Skim the Introduction, paying attention to the infrastructure report card. Read Chapter 1 and 2. Skim Chapter 3 and 10. Then read Chapter 13. For those doing network neutrality and infrastructure development, you should read all of this at some point.

- **Sowell, Jesse H. (2013). "Framing the Value of Internet Exchange Participation"'. In: *Proceedings of the 41st Research Conference on Communication, Information and Internet Policy.* Ed. by TPRC. Telecommunications Policy Research Consortium.**

  Read the Executive Summary, skim the paper, don't worry about the math.

- **Weller, Dennis and Bill Woodcock (2013). *Internet Traffic Exchange: Market Developing and Policy Challenges.* no. 207. https://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en. Paris: OECD.**
- **Kende, Michael and Charles Hurpy (2012). *Assessment of the Impact of Internet Exchange Points—Empirical Study of Kenya and Nigeria.* Report for the Internet Society 20945-144. Internet Society.**

Optional Readings

- **Sowell, Jesse H. (2013). "Framing the Value of Internet Exchange Participation"'. In: *Proceedings of the 41st Research Conference on Communication, Information and Internet Policy.* Ed. by TPRC. Telecommunications Policy Research Consortium.**

Class #10: Tuesday 02 November 2021

Privacy, Censorship, and Human Rights

The decentralized character of the Internet creates substantive opportunities for surveillance. In this lecture we will present Nissenbaum's notion of privacy as contextual integrity as the baseline conceptual framework for reasoning about privacy issues. We will then review privacy regulation (or more accurately, the lack thereof) in the US in comparison with the General Data Protection Directive (GDPR) that just came into effect in the EU. Like previous discussions, we will focus on the gap between policy objectives and the incentives of a transnational, decentralized cohort of private actors that are necessary to realize those objectives.

Like issues of privacy and surveillance, the decentralized character of the Internet also provides a wide variety of mechanisms for implementing censorship regimes and denying human rights online. In this lecture we will review the role of governments and the private sector combatting censorship. Broadening the discussion, we will discuss the issue of human rights and Internet access, debating whether Internet access itself is a human right or whether it is simply a tool that, following our earlier discussions of generativity, can be a tool to enable, or constrain, human rights.

Essential Readings

- **Nissenbaum, Helen (2004). "Privacy as Contextual Integrity"'. In: *Washington Law Review* 79. https://heinonline.org/HOL/P?h=hein.journals/washlr79&i=129, pp. 119–158.**
- **Sowell, Jesse H. (2010). "Mixed Context and Privacy"'. In: *Proceedings of the 38th Research Conference on Communication, Information and Internet Policy.***
- **Taddeo, Mariarosaria and Luciano Floridi (2016). "The Debate on the Moral Responsibilities of Online Service Providers"'. In: *Science and Engineering Ethics* 22.6, pp. 1575–1603. DOI: 10.1007/s11948-015-9734-1.**
- **Joyce, Daniel (2015). "Internet Freedom and Human Rights"'. In: *European Journal of International Law* 26.2, pp. 493–514. DOI: 10.1093/ejil/chv021.**
- **Zittrain, Jonathan L., Robert Faris, Helmi Noman, Justin Clark, Casey Tilton, and Ryan Morrison-Westphal (2017). *The Shifting Landscape of Global Internet Censorship.* SSRN Scholarly Paper ID 2993485. https://papers.ssrn.com/abstract=2993485. Rochester, NY: Social Science Research Network.**

- **Zalnieriute, Monika and Stefania Milan (2019). "Internet Architecture and Human Rights: Beyond the Human Rights Gap' '. In: *Policy & Internet* 11.1, pp. 6–15. DOI: 10.1002/poi3.200.**

Contemporary Readings

- **Cerf, Vinton G. (2012). "Internet Access Is Not a Human Right' '. In: *The New York Times*. https://www.nytimes.com/2012/01/05/opinion/internet-access-is-not-a-human-right.html.**

Optional Readings

- **Deibert, Ronald, John Palfrey, Rafal Rohozinski, Janice Gross Stein, Jonathan Zittrain, Robert Faris, Ernest J. Wilson III, and Nart Villeneuve (2008). *Access Denied: The Practice and Policy of Global Internet Filtering*. http://ebookcentral.proquest.com/lib/tamucs/detail.action?docID=3338769. Cambridge, UNITED STATES: MIT Press.**

  Read Chapters 1 and 2. Skim Chapter 3, 4, and the selected regions and countries that interest you.

Class #11: Tuesday 09 November 2021

Disinformation Campaigns

While we are now all familiar with the notion of disinformation from the debates around Russian interference in the 2016 elections, the notion of disinformation, and more broadly information warfare, has been around for 100s of years. In this lecture we will briefly survey and summarize the core literature on information warfare and disinformation. Next, we will review not only the 2016 issue, but the rise of disinformation-based strategies by various state and non-state actors attempting to replicate Russia's "success" story. Finally, we will conclude with a more sober analysis, highlighting that while the media focuses on substantive impacts ("successes"), these strategies are very hit-and-miss. Moreover, private actors are beoming more aggressive in curbing these campaigns. We will discuss these actions and, once again, revisit the necessity of public private partnerships in this space.

Essential Readings

- **Lazer, David M. J., Matthew A. Baum, Yochai Benkler, Adam J. Berinsky, Kelly M. Greenhill, Filippo Menczer, Miriam J. Metzger, Brendan Nyhan, Gordon Pennycook, David Rothschild, Michael Schudson, Steven A. Sloman, Cass R. Sunstein, Emily A. Thorson, Duncan J. Watts, and Jonathan L. Zittrain (2018). "The Science of Fake News' '. In: *Science* 359.6380, pp. 1094–1096. DOI: 10.1126/science.aao2998.**
- **Tandoc Jr., Edson C., Zheng Wei Lim, and Richard Ling (2018). "Defining 'Fake News'' '. In: *Digital Journalism* 6.2, pp. 137–153. DOI: 10.1080/21670811.2017.1360143.**
- **Benkler, Yochai, Robert Faris, and Hal Roberts (2018). *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics*. New York, NY: Oxford University Press.**

  Skim most of Chapter 1, **read** the Sections *Definitions: Propaganda and Its Elements, Purposes, and Outcomes* (pp. 23–38). Skim Chapter 3, reading the first part on the *Propaganda Feedback Loop* (pp. 75–82). Read Chapters 7 and 8. Skim Chapter 10, Read Chapters 11 and 12.

Optional Readings

- **Ferrara, E., O. Varol, C Davis, F. Menczer, and A Flammini (2016). "The Rise of Social Bots' '. In: *Communications of the ACM* 59.96. https://cacm.acm.org/magazines/2016/7/204021-the-rise-of-social-bots/fulltext.**

- **Vosoughi, S, D Roy, and S Aral (2018). "The Spread of True and False News Online''. In: *Science 359*, pp. 11465–1151.**
- **Wu, Tim (2017). *The Attention Merchants: The Epic Scramble to Get Inside Our Heads.* Reprint edition. New York: Vintage.**
- **Benkler, Yochai, Robert Faris, and Hal Roberts (2018). *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics.* New York, NY: Oxford University Press.**

Class #12: Tuesday 16 November 2021

Cybersecurity, Cybercrime, and Operations

As we know from the issues discussed thus far in Part II, many cyber policy issues require substantive public private collaboration to be effective. In this lecture we will roll up many of the issues we have discussed thus far under the umbrella of cybersecurity, how we protect both the infrastructure and end users (citizens from the perspective of state actors) from malicious activities online. We will review the history of cybercrime, how it evolved from the equivalent of online graffitti to a mature, ellicit market for malware (or cyberweapons in the next lecture), often referred to as crimeware as a service (CaaS). We will conclude this discussion by delving into some of Dr. Sowell's research on the challenges facing collaboration between private cybersecurity intelligence groups, law enforcement, and intelligence agencies. In this discuss we will cover the role (and failure of) mutual legal assistance treaties (MLATs) and recent cases that highlight the only way to combat cybercrime is through combining the capabilities of the state and the private sector.

Essential Readings

- **Anderson, Ross and Tyler Moore (2006). "The Economics of Information Security''. In: *Science* 314.5799. http://science.sciencemag.org/content/314/5799/610, pp. 610–613.**
- **The Rendon Group (2011). *Conficker Working Group: Lessons Learned.* http://www.confickerworkinggroup.org/wiki/pmwiki.php/ANY/LessonsLearned. Rendon, VA: The Rendon Group.**
- **Vixie, Paul (2014). *Hearing on Taking Down Botnets: Public and Private Efforts to Disrupt and Dismantle Cybercriminal Networks.* https://www.judiciary.senate.gov/imo/media/doc/07-15-14VixieTestimony.pdf. Washington, DC.**
- **Sowell, Jesse H. (2018). *Combining Capabilities in Cybersecurity Incident Response.* Stanford, CA: Center for International Security and Cooperation, Freeman Spogli Institute for International Studies, Stanford University.**

Contemporary Readings

- **FBI (2019). *Cyber Crime.* https://www.fbi.gov/investigate/cyber. Folder**
- **Interpol (2019). *Cybercrime.* https://www.interpol.int/en/Crimes/Cybercrime.**
- **FBI (2011). *International Cyber Ring That Infected Millions of Computers Dismantled.* https://www.fbi.gov/news/stories/international-cyber-ring-that-infected-millions-of-computers-dismantled. Story**
- **Krebs, Brian (2012). *Microsoft Responds to Critics Over Botnet Bruhaha.* https://krebsonsecurity.com/2012/04/microsoft-responds-to-critics-over-botnet-bruhaha/.**
- **Greenberg, Andy (2018). "Operation Bayonet: Inside the Sting That Hijacked an Entire Dark Web Drug Market''. In: *WIRED.* https://www.wired.com/story/hansa-dutch-police-sting-operation/.**

Class #13: Tuesday 23 November 2021

Cyberwarfare

What precisely constitutes cyberwarfare remains a contentious issue. In this lecture we will review existing definitions produced by state actors in work such as the Tallin Manual and the UN Group of Government Experts (GGE) (and the failure of this group's last meeting). Building on the work from the last lecture, we will highlight that while cyberwarfare is often distinguished from cybercrime, the very same tools and strategies, as well as a distinct set of highly skilled non-state actors, are often at play in both endeavors. Finally, we will conclude the discussion by exploring the classic notions of deterrence and coercion, in particular how the operationalizations of these concepts differ substantively from conventional notions of deterrence and coercion such as nuclear deterrence and limited warfare.

Essential Readings

– **Libicki, Martin C. (2009). *Cyberdeterrence and Cyberwar*. Rand Corporation.**

  Read Chapter 2 and 3.

– **Kello, Lucas (2013). "The Meaning of the Cyber Revolution: Perils to Theory and Statecraft'". In: *International Security* 38.2, pp. 7–40. DOI: 10.1162/ISEC_a_00138.**

– **Lindsay, Jon R. and Lucas Kello (2014). "Correspondence: A Cyber Disagreement'". In: *INTERNATIONAL SECURITY* 39.2. http://proxy.library.tamu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edspmu&AN=edspmu.S1531480414200052&site=eds-live, pp. 181–188.**

– **Kello, Lucas "Correspondence: A Cyber Disagreement Reply'". In: *INTERNATIONAL SECURITY* 39.2. http://proxy.library.tamu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edswss&AN=000345522800007&site=eds-live, pp. 188–192.**

– **Lindsay, Jon R. (2015). "The Impact of China on Cybersecurity: Fiction and Friction'". In: *International Security* 39.3, pp. 7–47. DOI: 10.1162/ISEC_a_00189.**

– **Brenner, J. and J.R. Lindsay "Correspondence: Debating the Chinese Cyber Threat'". In: *International Security* 40.1, pp. 191–193. DOI: 10.1162/ISEC_c_00208.**

– **Lindsay, Jon R. (2015). "Tipping the Scales: The Attribution Problem and the Feasibility of Deterrence against Cyberattack'". In: *Journal of Cybersecurity*, pp. 53–67. DOI: 10.1093/cybsec/tyv003.**

Class #14: Tuesday 30 November 2021

Project Presentations

In this class students will present their policy research projects.

Assignments and Writing Guidelines

The following provides details on the assignments for the course. All assignments *must be submitted in PDF format* and conform to the writing format guidelines. All assignments should be submitted electronically via Turnitin. All assignments are due *at or before 2359* on the assignment due date.

Assignments

As described briefly in Grading, course assignments comprise participation, a presentation of class readings, a take-home mid-term, a policy memo, and a policy research project. As a note on writing requirements, the length requirements are described in terms of *maximum* word count; there is no minimum. For the page equivalent, 500 words is *approximately* 1 page with 1 inch margins, **single-spaced**, 12 pt Times New Roman (or a very similar serifed font like the one used in this document).

Participation

Participation is made up of contributions in class (6 points) and peer-review of assignments (4 points). These are described below.

Class Contribution You will start with 6 (out of a possible 10) points. You are expected to have completed all of the readings for a given week before the class and be ready to discuss those readings in class. Portions of each class will be run seminar style, with the expectation that students discuss the concepts and issues at hand in a civil, constructive, yet rigorously analytic manner. This is your opportunity to gain points. If you attempt to participate and clearly demonstrate you have not done the related reading, you will definitely lose participation points. That said, informed, thoughtful, civil, and constructive disagreement with other students or Dr. Sowell is encouraged, especially when Dr. Sowell makes intentionally leading, biased, or contradictory assertions to encourage discussion and creativity.

Also, as a note on participation, Dr. Sowell realizes that laptops and tablets are the modern mechanisms for taking notes. Dr. Sowell also encourages students to quickly look up relevant materials online to contribute during discussion. **Please refrain from spending class time on e-mail, social media, instant messaging, or anything else that is not directly related to the class or discussion at hand.**

Peer Review For the policy project proposal, detailed outline, rough draft, and the policy memo, we will being doing a 20-30 minute peer review in the class the following week after the assignment is due. Each of these peer reviews will be worth 1 point of your final grade and will be submitted via Turnitin the *Monday* before our Wednesday class so Dr. Sowell and the recipient of the review can read over the peer reviews.

You will be paired with another student to peer review their assignment for writing and critical thinking. This means you are expected to read their work and provide a maximum 500 word, ***constructive critical assessment*** of how well they conveyed their ideas. This *is not* as summary of their assignment. You should describe what elements of the writing were effective, and more importantly, which could be improved upon based on the learning objectives for that assignment.

Class Presentations

Each student will be required to do *one* in-class presentation on materials from the essential readings for a selected class. The choice of the class and the reading from that class is up to the student. **Extra credit of up to 2 points** will be given if the student includes (and effectively uses) external references (i.e., news or journal articles *not* currently in the course materials available in the course's shared Zotero library) to support their discussion points.

A Google survey will be sent out after Class 01 for students to select the topic they wish to present on. The survey will be first come, first serve.

Guidelines For the presentation itself, the student will:

- develop a set of slides that walk the class through the selected topic
- create a folder (collection) in their shared group library on Zotero for their presentations
  - name presentations folder `Class Presentations`
  - within that folder, create a folder for each presentation the student is presenting entitled `lastname Class X Presentation` where `X` is the class number
  - add presentation slides to the corresponding folder
    - in PDF or
    - if using Google Slides, add the link and share with jsowell@tamu.edu
  - add references used in the slides to the corresponding folder
- the presentation is expected to run for a maximum of 10 minutes, *not including* discussion

- prepare **3** leading questions for discussion (which should be after your conclusions slide)
- send a note to Dr. Sowell by 0800 on the day of the presentation indicating the slides are in Zotero

The student may present either from the classroom PC or their own laptop. The student is strongly encouraged to test their setup at least a day before the date of their in-class presentation.

Class Presentation Schedule Students will be sent a form to select their preferences for presentation topics. The schedule of class presentations will added to `Syllabus` folder in Zotero after the schedule has been established.

Please send Dr. Sowell an e-mail indicating which paper you will be presenting for your class presentation *the Friday before* the week of your presentation.

Policy Memo

Assignment due: *Wednesday 08 December 2021* along with final draft of policy research project.

Learning Objectives:

- summarize *and evaluate* the policy and/or security issues presented in your policy research project for an audience at the policy making and/or executive level
- present the reader with well-defined options, without leading the reader
- compare and contrast options
- balance these options and offer a recommendation

Word count: between *500 and 1000 words*, approximately 1-2 pages.

It is common to read policy memos that simply summarize and organize well-known, high-level issues. They provide a very brief tour of a given issue, such as the "going dark" debate or network neutrality. The more compeling policy memo provides an analysis of an issue based on a substantive, deep dive into the material (such as your policy research project). You may choose one of two "styles" of policy memo: present options to the reader and let them decide or present options, and a solution. In either case, the presentation of material and options should be representative of the issue and factors involved—it should not read as just one side of the debate or a partisan argument. The policy memo should present the essential factors at play; evaluate their implications; provides very important, select illustrative instances; presents the options available; and may offer a solution.

Mid-Term

The mid-term will be distributed on **Tuesday 26 October 2021** and will be due **at or before 2359 on Sunday 07 November 2021**.

The objective of the mid-term is to write a few small essays that apply the concepts developed thus far in the class. These essays will be graded on clarity and mastery of the concepts. This latter, mastery of the concepts, means that the student not only provides a convincing narrative, but effectively explains and utilizes concepts from the class, such as how the attribution problem applies, to describe a problem, explain the problem, evaluate that problem, then prescribe effective policy and/or governance solutions.

Another role of the mid-term is to get feedback on structuring a sociotechnical analysis, one that integrates an understanding of the technical dynamics introduced in lectures and the policy and governance problems and implications that arise when the technical (inevitably) becomes political. The kind of analysis expected in the mid-term is practice for the kind of analysis expected in the policy research project described below.

Policy Research Project

The objective of the policy research project is for you to apply lessons and concepts learned in the course to a policy or governance issue area of the student's choice. You are expected to apply what you have learned about the Internet's function, the organizations and institutions managing these functions, how these actors cope with endemic uncertainty, and how these actors are learning to engage with conventional actors in the global political arena (states, international governmental organizations, non-governmental organizations, etc.). There is no minimum word limit, but the maximum word limit is 10,000 words, approximately 20 pages. See the writing guidelines for specifics on what does and does not contribute to the word count.

Students are *required* to maintain the references used in their assignments, in particular for the policy research project, in Zotero. If the student has not already, the student should create a Zotero account.

Policy research project milestones:

1. **Zotero Policy Research Project Group**

   Assignment due: ***Thursday 02 September 2021***

   Students will use Zotero to create a shared group (library) entitled `Z - CP - lastname - Final` (where `lastname` is your last name). The link to create groups is only available via the web interface, click on the `Groups` tab and then `Create A New Group`. Then use Zotero's group invitation function (under the `Manage Members` link below the name of the group in the list of groups) to invite Dr. Sowell (jsowell@tamu.edu) to the group. Under `Library Settings` the Zotero Group should be private and Dr. Sowell should have edit rights so he can share references with the student. **This task is worth 3 points of your final grade (from participation). If you do not set up and share your Zotero library by 2359 on Thursday 02 September 2021 you will lose these points permanently.** For step-by-step instructions, see the section on Zotero Configuration in the Appendix. If you have any questions or run into any problems, please e-mail Dr. Sowell (jsowell@tamu.edu) at least one hour before class on Thursday 02 September 2021.

   All references used in the policy research project *must* be saved in the student's shared Zotero library. This will make your life a lot easier: you can easily copy references from the course library to your library for use in your policy research project, it allows Dr. Sowell to review your policy research project references with you, and allows Dr. Sowell to share relevant references with you when appropriate. When adding references to journal articles, reports, etc., you should make sure the PDF of the document is attached to that entry. The Zotero Connector will often do this for you, but you should double check and add the PDF if it does not.

   Students will submit the milestone deliverables for their policy research projects (enumerated below) via Turnitin.

2. **Proposal** *(10%)*

   Assignment due: ***Friday 17 September 2021***

   Peer Review due: ***Monday 20 September 2021***

   Learning Objectives:

   – briefly summarize a cyber policy issue
   – describe the broad problem
   – narrow the issue to a policy research issue
   – describe the type of literature review and analysis that will help solve the narrower problem proposed

   The proposal should be a 500 word (max) description of the policy or governance issue the student will address in their policy research project. At a minimum, the proposal should reference readings from the course (with a bibliography that does not count against the 500 word limit). A *good* proposal will also include references to materials outside the course that (1) support the arguments in the proposal and (2) shows the student has already started their own research on the topic.

3. **Detailed Outline** *(15%)*

   Assignment due: ***Friday 22 October 2021)***

   Peer Review due: ***Monday 25 October 2021)***

This milestone has two parts: the detailed outline and a systematic literature review, which should be an appendix of your detailed outline document.

Learning Objectives:

- decompose the ideas for policy research in the proposal into distinct elements of an article (introduction, background, cases, analysis, recommendations, conclusions)
- understand how these contribute to and build into a well-researched and well-argued policy analysis
- use a detailed outline to map out the fundamental structure and flow of the paper's argument
- identify and incorporate additional research on your topic into the argument that is developed
- understand the role developing background concepts and uses those concepts in cases and as the connective logic in analyses and recommendations
- recognize that your argument **will iteratively change, evolve, and improve** over the course of the detailed outline, your drafts, and the final

The objective of the detailed outline is to articulate the fundamental structure of the project report, the current analysis and arguments, supporting materials, and how these are used to support the analysis and argument. The outline is intended to get the student thinking about the structure of the argument; it is expected to change based on feedback and further work leading up to the rough draft. That said, the detailed outline should articulate a clear and coherent narrative, argument, and supporting analysis.

There are two examples of detailed outlines from previous classes in the shared Zotero library under `Syllabus/Detailed Outline Examples`. Both of these received full credit and the admiration of Dr. Sowell for excellent work. The Hickman example follows the "syllabus model" criteria (described below) for a detailed outline. The detailed outline clearly lays out substantive openers and closers and clearly and articulately establishes the flow of the argument and supporting evidence. Hickman also provided excellent citations to back her assertions. The Burdette example uses the "quote method" for detailed outlines. This does include openers and closers, but provides nuance by integrating quotes and citations to sources that apply to that section (or subsection), demonstrates the flow of the argument, as well as the depth of the research on the project up to that point. Either of these models is acceptable.

The "syllabus model" of a detailed outline comprises:

- a title page (title, name, date)
- the approved proposal, followed by
- enumerated headers (1, 2.3, 5.6.3, etc.) for the major sections, subsections, etc.
- enumerated sections should include an "opener" and a "closer" that conveys the content for that section:
  - the overall objective of the detailed outline is to tell the high-level story of the argument and analysis
  - the "opener" (1-3 sentences) is like an opening paragraph: it introduces the topic, problem, argument, or analysis to be presented in that section
  - the "closer" (1-3 sentences) is like the concluding paragraph: it articulates the take-aways of a narrative, summary of the problem, highlights of the argument, or conclusions of an analysis
  - sentences in both the opener and closer should be substantive declaratives, **not** "This section will do this" or "This section will show that"
- an annotated bibliography
  - every work *you cite* in your project should have an annotation in the `Notes` section of the bibliographic entry in Zotero
  - each annotation of the bibliography should be two to three sentences, describing how this work contributes to the background, analysis, and/or argument
  - add your annotations to the `Notes` section of the Zotero bibliographic entry for each work you cite in your project, it does not have to be in the report itself

4. **In Class Project Presentation** *(5%)*

Assignment due *Tuesday 30 November 2021*

Learning Objectives:

- succinctly convey the key elements of your work in a way that can be understood *without* reading your entire paper
- recognize a presentation will not necessarily incorporate all of your findings
- recognize that the presentation may not have the same structure (major sections) as your paper
- understand the value of writing a script for your presentation, but *not reading from that script* in the presentation itself
- effective use of bulleted points to guide the presentation, but only selectively use long sentences or quotes
- appropriate use of visuals such as images, graphs, or diagrams to keep the audience's attention and drive home points, but not overwhelm the audience with distractions

On the last day of class students will present their policy research projects. Each student presentation will be approximately 15 minutes followed by discussion. Slides are required for the presentation.

5. **Policy Research Project Report** *(20%)*

Assignment due: *Wednesday 08 December 2021*

Learning Objectives:

- no piece of writing is *ever* perfect and you will always find ways to improve it
- identify elements of your rough draft that need additional detail
- identify elements of your rough draft that were redundant, or that you thought would contribute to your argument but are not as important as you thought—it is OK to delete unnecessary material as it distracts from an effective overall argument and recommendations
- identify insights from writing in later sections (cases, analyses, recommendations) that can be summarized and moved into earlier sections (introduction, background) to effectively signpost your argument, making the flow more effective and guiding the reader through your argument
- write a 500 word maximum executive summary of the final report that summarizes the problem, the background concepts and issues at play, the cases, your analysis, and your recommendations; this should not just be a variation of your introduction, but rather a concise articulation of the key points for a policy maker, regulator, or exective that wants to know whether this is worth digging into further (or having their staff dig into this work further)
- know when to (perhaps thankfully) stop revising

Policy research project reports will follow the write-up formatting guidelines below.

Write-Up Formatting Guidelines

These guidelines are not optional and will be strictly enforced. If you submit material that does not conform to these guidelines, it will be returned ungraded and with a 10% late penalty.

- single-spaced
- title page with title, name of author, and date; title page should not have a page number
- title page does not contribute to word count for assignment unless otherwise specified
- executive summary (where required in the project specification) should be on the page following the title page, introduction to paper should start at beginning of following page
- font should be New Times Roman or similar serifed font
- font size for executive summaries and body of text should be 12 pt
- document should be fully justified as in books and journal articles, no ragged right edge
- use enumerated footnotes, 10 pt; *do not ever use endnotes*
- 1 inch margins all around (left, right, top, bottom, this is standard in Word)
- block quotes consistently inset from left and right margins
- page enumeration in footer, no page number on title page, body enumeration starts starts at page 2
- enumerate sections and subsections (1, 2.1, 3.5.2, etc.)

- figures should be labeled ("Figure 1: Scatter plot of data set X", "Figure 2: Distribution of variables in category Y", etc.), referenced by figure number ("Note that the distribution in Figure 4 is left skewed…"); figure labels will contribute to word count
- references must be stored in Zotero
- in-text references and bibliography should follow *Chicago Manual of Style 17th Edition (author-date)* format, you can find this in the Zotero settings under `Cite`.
- the bibliography will not contribute to the word count
- in-text references:
  - materials (articles, books, etc.) with page numbers must include the page number or page range that includes the quote or evidence referenced
  - materials, such as web pages that are not enumerated, should include the finest grained subsection containing the quote or evidence where the page number or page range would be in the in-text reference
  - in-text references that do not follow these guidelines will result in assignment returned with a 10% penalty
- documents submitted should be in PDF format and should allow highlighting of text using PDF annotation tools such as Adobe Acrobat Reader; you should check this as you write and before submitting, exotic invisible formatting in Word occasionally breaks this requirement
- PDF documents will be submitted electronically via Turnitin; hard copy will not be accepted

Dr. Sowell will provide an example PDF to illustrate these guidelines. When grading your assignments, Dr. Sowell will annotate your document electronically. Any mainstream PDF reader, such as Adobe Acrobat Reader, Skim, or Apple's Preview will render these comments. A comment attached to the upper left of the title page or first page of the assignment will contain the total grade and overall comments. Annotated PDFs with your grades will be uploaded to your Zotero shared library.

University Policies

Attendance

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Other absences may be excused at the discretion of the instructor with prior notification and proper documentation. In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

On some occasions, the instructor may have to miss a class due to administrative or academic responsibilities out of town. If it does occur, the instructor reserves the right to reschedule class at a time when the vast majority of students are available for the make-up class and will convey the material to students unable to attend the make-up during office hours.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.

"Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" (Student Rule 7, Section 7.4.1).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code (see Student Rule 24).

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Dr. Sowell strongly encourages reading groups for discussing course materials, but not for distributing the reading load. Dr. Sowell also recognizes the role and efficacy of group learning and peer review of assignment deliverables, such as proof-reading one another's work and/or discussing the structure and flow of arguments presented in assignments. If you engage in this kind of collaboration, you must add a footnote to the your name (as the author) with a statement indicating who you collaborated with and how they contributed to the work you are turning in under your name. As an example, "John Smith proof-read a draft of this assignment, providing editorial comments and suggesting I rearrange the order of my cases to improve the logical flow of my case studies section." Another example would be "I discussed this assignment with Jane Smith and she suggested the articles (Warner 2016; Billings 1967), which I have included in this work."

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statements on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

Appendix

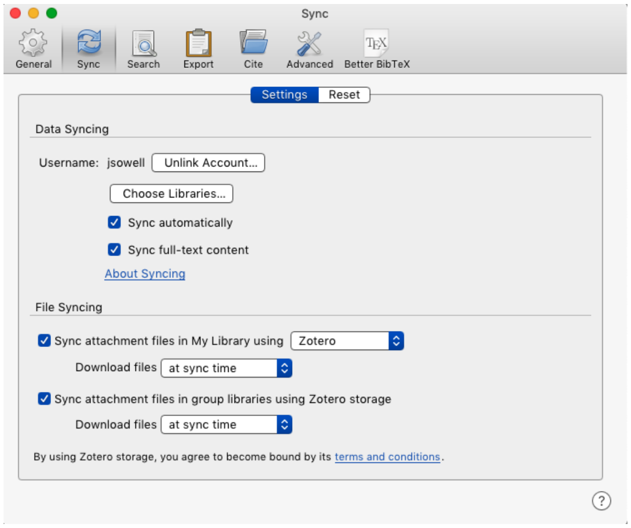
Zotero Configuration

The following instructions describe how to set up the Zotero App and create a shared group library.

Zotero App Setup

1. Create a Zotero account at https://www.zotero.org using your `@tamu.edu` e-mail address.
2. Install
    1. Zotero app, available at https://www.zotero.org/download/
    2. Install the Zotero Connector web browser plugin, available at https://www.zotero.org/download/connectors
3. You should receive an invitation to the course library in both the e-mail you set up your account with and in the Zotero Inbox, available via the Zotero web interface.
4. To confirm your Zotero app is syncing with the course library, you should check your Zotero app preferences. In the `Preferences` window, select the `Sync` tab and confirm that
    - Zotero shows `Username: your_username` (where `your_username` is your username)
    - you have checked `Sync Automatically` and `Sync full-text content`
    - you have checked `Sync attachment files in My Library using Zotero` and selected `Download files at sync time`
    - you have checked `Sync attachment files in gorup libraries using Zotero storage` and selected `Download files at sync time`

    A screenshot illustrating what your settings should look like can be found below.



Data Syncing

Username: jsowell [Unlink Account...]

[Choose Libraries...]

☑ Sync automatically

☑ Sync full-text content

About Syncing

File Syncing

☑ Sync attachment files in My Library using Zotero

Download files at sync time

☑ Sync attachment files in group libraries using Zotero storage

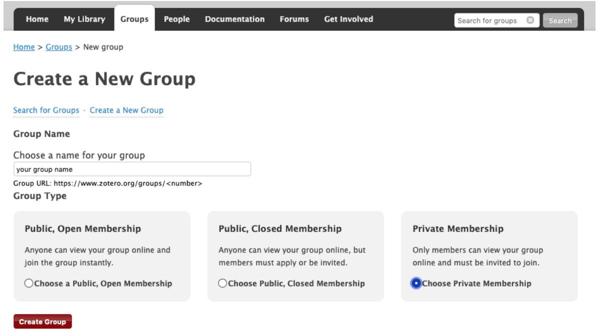
Download files at sync time

By using Zotero storage, you agree to become bound by its terms and conditions.

If you prefer not to sync automatically, uncheck `Sync automatically`. ***If you choose this option you will have to explicitly sync your libraries using the small circular green arrow in the upper right of the Zotero app.***

Shared Groups (Library) Setup

1. Log in to the Zotero web interface at https://www.zotero.org
2. Click on the `Groups` link
3. Click `Create a New Group` link directly under the header `Zotero Groups`
4. Add a name for your shared library where it says `Choose a name for your group` and select the `Group Type` as `Private Membership` as illustrated below



Home > Groups > New group

Create a New Group

Search for Groups · Create a New Group

Group Name

Choose a name for your group

your group name

Group URL: https://www.zotero.org/groups/<number>

Group Type

Public, Open Membership

Anyone can view your group online and join the group instantly.

○ Choose a Public, Open Membership

Public, Closed Membership

Anyone can view your group online, but members must apply or be invited.

○ Choose Public, Closed Membership

Private Membership

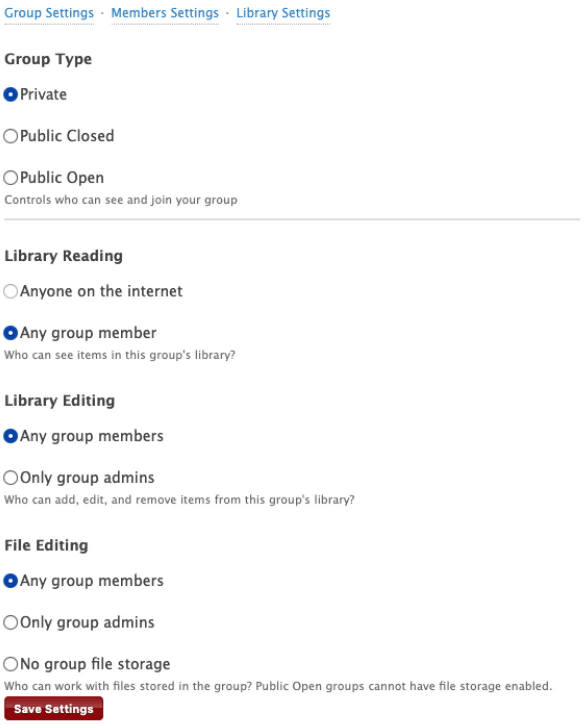
Only members can view your group online and must be invited to join.

● Choose Private Membership

5. Click the `Create Group` button
6. Select the following group settings (illustrated in the screenshot below):

   – for `Group Type`, select `Private`
   – for `Library Reading`, select `Any group member`
   – for `Library Editing`, select `Any group members`
   – for `File Editing`, select `Any gorup members`

   then click `Save Settings`; these are the defaults, so you should not have to change anything.



Group Settings · Members Settings · Library Settings

Group Type

● Private

○ Public Closed

○ Public Open

Controls who can see and join your group

Library Reading

○ Anyone on the internet

● Any group member

Who can see items in this group's library?

Library Editing

● Any group members

○ Only group admins

Who can add, edit, and remove items from this group's library?

File Editing

● Any group members

○ Only group admins

○ No group file storage

Who can work with files stored in the group? Public Open groups cannot have file storage enabled.

7. To add new members to the group, click the blue link `Member Settings` link under the heading `groupname: Member Settings` and click the link `Send More Invitations` at the bottom of the page and follow the instructions there.

Notes on Zotero Connector Plugin

The Zotero Connector adds a small icon to the right of the address bar in your web browser (upper right corner of the window). To use the Connector, the Zotero app must be open. By default, when you click the Zotero icon to download a given reference, it will automatically put that reference *in whichever folder you currently have selected in the Zotero app.* This is quite convenient if you have organized your research folder into topic specific subfolders, or, in my case, if you have it organized by class and category of reading material (essential, optional, etc.).