

Patrick Windham  
Program in Science, Technology, and Society  
Stanford University  
Autumn 2007  
[pwindham@stanford.edu](mailto:pwindham@stanford.edu) or [patwindham@aol.com](mailto:patwindham@aol.com)

## **SYLLABUS, STS 176: TECHNOLOGY AND POLITICS**

Mondays and Wednesdays, 3:15 p.m.-5:05 p.m., Building 380, Room 380X  
Office hours: Wednesdays, 1:00 p.m.-3:00 p.m., Building 370 Room 104

### **OVERVIEW OF COURSE**

**Course objectives:** This course examines two subjects: (1) the impact that politics and government have on technology – on technology’s development, applications, and benefits and costs – and (2) the impact that technologies such as television and the Internet have on politics, including elections. It focuses on American politics, but with some attention to developments in other countries.

The course pays particular attention to questions of technology and democracy.

- How democratic are the decisions that governments make regarding technology? Do citizens and elected officials or a relatively few experts make the major decisions? Are decisions made in a clear, deliberative way, or in fact do societies tend to drift in certain technical directions without much thought or deliberation?
- What would a more “democratic” way of directing technology look like, and would it actually be desirable? For example, what would be more “democratic” ways of guiding the development and use of biotechnologies or nanotechnologies?
- In terms of the impact of technology on politics, have innovations such as television and the Internet enhanced or hurt important features of democratic life such as equality, freedom, and participation?

**Course themes:** Three themes run through this course:

- Today, all governments are revolutionary, in the sense that they fund new technologies that will produce significant but often-unforeseen changes. In turn, these changes create benefits but also may create problems or conflict with established cultural values. And major political battles often break out over who will control new technologies. Thus, the management of new technologies and their consequences is a major challenge for societies and governments.

- In technology politics, a constant tension exists between political leaders and citizens, on the one hand, and technical experts, on the other. Political leaders set broad policy – through funding priorities, regulations, and other policies – but they must delegate technical details to the experts in government agencies, research organizations, and corporations. Technical experts, for their part, seek autonomy – the ability to run technical activities without “political interference.” Sometimes they build political coalitions that give them great autonomy, with results that are either impressive successes (such as the Apollo Program) or, if the technical viewpoint is narrow, serious failures (such as the design of the original nuclear power plants). How political leaders and experts interact and should interact are important questions.
- New technologies have broad impacts on both society as a whole – influencing, for example, who has wealth, political power, access to media, etc. – and on specific aspects of politics, such as how people communicate and participate. These new technologies can have unforeseen consequences. For example, the Internet allows new virtual communities that provide more information and connection to like-minded individuals, but may lead to less contact and discussion with people of different viewpoints.

**Course outline:** The course is divided into four parts:

- *Introduction to technology and politics.* What are “technology”, “politics”, and “democracy”; and what types of public debates concerning technology arise in democratic societies?
- *How politics shape technology.* This section of the course asks why we get the technologies that we do, and who decides. It covers several topics: basic features of American politics; traditional American views regarding technology and the appropriate role of government concerning technology; how technical experts seek political autonomy and how that autonomy can lead to both good and bad results for society; the rise, since the late 1960s, of political challenges to technical elites; and the ways in which economic elites seek to control new technologies. Case studies will include problems with nuclear power and the space shuttle, the controversy over missile defense, debates over who should control biotechnology and nanotechnology, struggles over control of new communications industries, and California’s policies for reducing greenhouse gas emissions.
- *How technology affects politics.* Technological change can affect politics in several ways: by changing society and the economy, including the distribution of wealth and economic and political power; by changing the nature and relative power of different branches of government; and by changing how citizens communicate, organize, and participate in politics and especially elections. In short, how do new technologies change who has power, how leaders decide, and how we talk and interact with each other? This section of the course will look at

these topics and examine several case studies: how information technology is contributing to “offshoring” and how offshoring affects the economic and political position of American workers; how new technologies changed and challenged Congress, including the role of air conditioning in the rise of the Republican Party in the American South; how the Internet may or may not be changing American politics; and the impact of electronic voting machines and new government surveillance programs on political life and social trust.

- *Conclusion: democracy and technology.* The final class will review the questions of how much control over technology democratic institutions actually have and how much control is possible or desirable.

**Prerequisite:** This course is aimed at upper division undergraduates and graduate students. The prerequisite is Political Science 2 (Introduction to American National Government and Politics), or permission of the instructor.

**Grading:** Grades will be determined as follows:

- *Three short papers:* 45 percent of the final grade (15 percent each). These three papers will be a maximum of three double-spaced pages each. For the first two papers, students will answer one question among a list of questions offered by the instructor. For the third paper, each student will critique the Web sites of two presidential candidates. The three papers will be due on October 15, November 5, and November 26.
- *Final paper:* 40 percent of the final grade. Instead of a final examination, each student will write a paper between 10 and 15 double-spaced pages. Students will pick their own topics, in consultation with the instructor.
- *Class participation:* 15 percent of the final grade.

**Required readings:**

- Course reader (abbreviated below as “R”), available from the campus bookstore.
- John Street, *Politics and Technology* (New York: The Guilford Press, 1992), available at the bookstore.
- Debora Spar, *Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from the Compass to the Internet* (New York: Harcourt, 2001), available at the bookstore.
- Materials on the Web (abbreviated below as “W”).
- Instructor’s Notes – notes with information and additional readings – that I will e-mail to you (abbreviated below as “IN”).

## COURSE SCHEDULE AND READINGS

### A. INTRODUCTION TO TECHNOLOGY AND POLITICS

#### 1. Introduction to course (September 24)

*Introduction to the course's topics, themes, and sessions. There are no readings for this introductory session.*

#### 2. Technology, society, and politics: what shapes what? (September 26)

*Discussion of basic terms and concepts. What do the terms "technology" and "politics" mean? And does technology drive social and political change, or do politics determine the shape of technology, or is there some combination of effects? The readings are:*

- Norman Vig, "Technology, Philosophy, and the State," chapter 1 in Kraft and Vig, *Technology and Politics*. (R)
- Langdon Winner, "Do Artifacts Have Politics?" chapter 2 in Kraft and Vig, *Technology and Politics*. (R)
- Robert McGinn, "Social Control of Science and Technology," chapter 14 in *Science, Technology, and Society*. (R)

#### 3. The role of the state (October 1)

*The "state" (governmental institutions) shapes technology in three main ways: as underwriter/supporter, as user/customer, and as regulator. The state also supports science, which leads to the important question of whether the state can or should control science and its impact on technological development. John Street looks at these topics in both the United States and the United Kingdom.*

- John Street, *Politics and Technology*, chapters 1-4.

#### 4. Debates over the control of technology (October 3)

*What are the political effects of technology, how do societies choose their technologies, and what is the relationship between technology and democracy?*

- John Street, *Politics and Technology*, chapters 5-9.

### B. HOW POLITICS SHAPE TECHNOLOGY

#### 5. American attitudes towards technology (October 8)

*This class covers both general American attitudes towards technology and the specific arguments about what role the federal government should play in the development and use of technology. Leo Marx discusses both the dominant American attitude towards technology – an optimistic attitude – and the history of dissent by those who think new technologies have been destructive. David Hart examines five different political positions regarding federal technology policy – positions that are*

*based largely on different views of what government should and should not do. He argues that the technology policy adopted by the U.S. Government after World War II is a “hybrid” of these five enduring viewpoints. And that “hybrid” is the result of political battles, not the automatic product of efficient government or some overall American ideology.*

- Leo Marx, “Does Improved Technology Mean Progress?” chapter 1 in Teich, *Technology and the Future*, Ninth Edition. (R)
- David Hart, “The Malleability of American Liberalism and the Making of Public Policy” and “The Past in the Present: The ‘Hybrid’ in the Cold War and Beyond,” chapters 1 and 8 in *Forged Consensus: Science, Technology, and Economic Policy in the United States, 1921-1953*. (R)

**6. Two cautionary tales about elite control of technology: civilian nuclear power and the space shuttle (October 10)**

*World War II brought a vast expansion of federal spending on science and technology. It also ushered in an era in which Congress, Pentagon officials, and other government leaders funded large technology projects and deferred heavily to technical experts. Yet while agency autonomy sometimes led to notable successes – the U.S. Department of Agriculture in the early 20<sup>th</sup> century, the Manhattan Project during World War II, the Apollo Program, and the development of the Internet – political pressures and narrow agency perspectives also led to serious failures. This session looks at general political pressures and two notable failures: civilian nuclear power in the 1960s and 1970s and the events leading up to the loss of the space shuttle Columbia.*

- Instructor’s Note, “Background on Government Technology Programs, Including Nuclear Power and the Space Shuttle.” (IN)
- G. Pascal Zachary, excerpts from *Endless Frontier: Vannevar Bush, Engineer of the American Century*. (R)
- Roger G. Noll and Linda R. Cohen, “Economics, Politics, and Government Research and Development,” chapter 6 in Kraft and Vig, editors, *Technology and Politics*. (R)
- Joseph G. Morone and Edward J. Woodhouse, “Democratic Control of Technology,” chapter 7 in *The Demise of Nuclear Energy? Lessons for Democratic Control of Technology*. (R)
- Columbia Accident Investigation Board, “Executive Summary” and chapters 5, 7, and 8 in *Report Volume I*, August 2003. (W)  
[http://www.nasa.gov/columbia/home/CAIB\\_Vol1.html](http://www.nasa.gov/columbia/home/CAIB_Vol1.html)

**7. Politics since the late 1960s: challenging the technical elites (10/15)**

*In the late 1960s and throughout the 1970s, public trust in government agencies, large corporations, and even the research community declined and opposition grew. Pollution and other negative “externalities” (side-effects) of technological activities led to this new opposition. The U.S. moved from an era of deferring to experts – an era once dominated by the legendary Vannevar Bush – to a new age that demanded*

*that technical elites in government, industry, and research pay more attention to citizen concerns and show greater accountability. The 1970s and 1980s saw increased debate about some military technologies. The 1970s also saw a wave of new environmental and safety rules designed to regulate companies, agencies, and researchers.*

- Dorothy Nelkin, “Science, Technology, and Political Conflict: Analyzing the Issues,” in Nelkin, editor, *Controversy: Politics of Technical Decisions*. (R)
- Rebecca Slayton, “Discursive Choices: Boycotting Star Wars Between Science and Politics,” *Social Studies of Science*, February 2007 (from Instructor).
- Natural Resources Defense Council, “E-law: What Started It All.” (W)  
<http://www.nrdc.org/legislation/helaw.asp>
- Harvey Brooks, “Controlling Technology: Risks, Costs, and Benefits,” chapter 8 in Kraft and Vig, editors, *Technology and Politics*. (R)

**NOTE: ON OCTOBER 15, THE FIRST SHORT PAPER IS DUE**

#### **8. Regulating industrial technology (October 17)**

*After the new laws of the 1970s, political battles continued over which groups – industry or citizen groups – would control industry’s use of technology and what rules would apply. In the 1980s, during the Reagan Administration, industry failed in its efforts to repeal the new regulatory laws. So, industry leaders then focused on the regulations written pursuant to these laws. They pursued what they called “regulatory reform,” and argued that no new regulations should be issued that did not meet the tests of “cost-benefit analysis” and “risk assessment.” David Dickson and some other analysts saw this as an attempt to maintain elite control over technology, while industry groups saw it as a way to prevent unnecessary burdens and maintain U.S. industrial competitiveness. Meanwhile, universities pursued new technologies and began to work more closely with industry.*

- James Wilson, “The Politics of Regulation,” in chapter 2, “Regulatory Legislation: The Process of Enactment,” in Rabin, editor, *Perspectives on the Administrative Process*. (R)
- David Dickson, “Regulating Technology: Science as Legitimation,” chapter 6 in *The New Politics of Science*. (R)
- Jeremy A. Leonard, “How Structural Costs Imposed on U.S. Manufacturers Harm Workers and Threaten Competitiveness,” 2003, a report prepared for The Manufacturing Institute of the National Association of Manufacturers. (W)  
[http://www.nam.org/s\\_nam/bin.asp?CID=201715&DID=227525&DOC=FILE.PDF](http://www.nam.org/s_nam/bin.asp?CID=201715&DID=227525&DOC=FILE.PDF)
- Sheldon Krimsky, “Regulating Recombinant DNA Research and Its Applications,” chapter 12 in Nelkin, editor, *Controversy: Politics of Technical Decisions*. (R)
- Daniel S. Greenberg, “The Political Triumph of Science” (chapter 28) and “Epilogue,” in *Science, Money, and Politics: Political Triumph and Ethical Erosion* (R)

**9. The politics of new technology-based industries I (October 22)**

*The preceding two classes discussed one kind of politics surrounding technology: the conflicts over environmental, health, and safety regulations. The next two classes turn to another kind of politics: competition and control in new technology-based industries. According to Debra Spar, historically new tech-based industries go from creative chaos in which pioneer firms want government to “stay out the way” to a point where those same pioneers ask government to protect their property rights and regulate competition. How does this process work, who sets the rules, and who benefits? The readings for this session focus particularly on the politics of the telegraph and early radio.*

- Debora Spar, *Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from the Compass to the Internet*, Prologue and chapters 2 and 3. (Chapters 1, 4, and 5 are optional but recommended.)

**10. The politics of new technology-based industries II (October 24)**

*Information-technology industries and particularly the Internet have become political battlegrounds, as companies and consumers alike seek rules that will help them. Spar discusses these battles. And in his reading, Lawrence Lessig argues that powerful industry groups are now trying to use the political process to rewrite traditional rules over consumer use of the Internet.*

- Debora Spar, *Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from the Compass to the Internet*, chapters 6, 7, and 8.
- Lawrence Lessig, “The Internet under Siege,” chapter 24 in Teich, editor, *Technology and the Future*, Ninth Edition. (R)

**11. The politics of California’s Global Warming Solutions Act (October 29)**

*California’s global change politics at first seem surprising. While Washington remains deadlocked on this issue, in September 2006 California’s legislature and governor enacted Assembly Bill 32, the California Global Warming Solutions Act. It aims to cut California’s greenhouse gas emissions by approximately 25 percent by 2020, and it is the most ambitious attempt yet by any U.S. state to measure and then reduce these emissions. We will examine two political questions: First, how did this law ever pass, given the opposition to regulating greenhouse gas emissions? What arguments did each side make, and how did the proponents of regulation build a winning coalition? And, second, is the new likely to result in real reductions, or will politics prevent that?*

- Instructor’s Note, “The Politics of California’s AB 32.” (IN)
- Assembly Bill No. 32, California Global Warming Solutions Act of 2006. (W) [http://www.law.stanford.edu/program/centers/enrlp/pdf/ab\\_32\\_bill\\_20060927\\_chaptered.pdf](http://www.law.stanford.edu/program/centers/enrlp/pdf/ab_32_bill_20060927_chaptered.pdf)

- W. Michael Hanemann and Alexander E. Farrell, *Managing Greenhouse Gas Emissions in California*, “Executive Summary.” (W) [http://calclimate.berkeley.edu/Cover\\_and\\_Executive\\_Summary.pdf](http://calclimate.berkeley.edu/Cover_and_Executive_Summary.pdf)
- Margo Thorning, American Council for Capital Formation, “California Climate Change Policy: Is AB 32 a Cost-Effective Approach?” (W) <http://www.accf.org/pdf/Analysis061406.pdf>
- Lawrence H. Goulder, “California’s Bold New Climate Policy: The Challenges Ahead.” (W) <http://www.stanford.edu/~goulder/SIEPR%20Policy%20Brief%20--%20CA%20Climate%20Policy%20-%20Nov06>
- Emma Duncan, “Cleaning up: A special report on business and climate change,” *The Economist*, June 2, 2007. (with IN)

## **12. The politics and policy of regulating nanotechnology (October 31)**

*Nanotechnology is a set of technologies that offers great promise but also may create serious safety and health problems. Researchers and corporate leaders generally resist regulation, while some environmentalists urge caution and much more testing. What are the politics of this issue, and what policy proposals might be acceptable to both advocates and critics of nanotechnology?*

- Chris Phoenix and Mike Treder, “Applying the Precautionary Principle to Nanotechnology,” Center for Responsible Nanotechnology, January 2003. (W) <http://www.crnano.org/precautionary.htm>
- Glenn Harlan Reynolds, “Forward to the Future: Nanotechnology and Regulatory Policy,” Pacific Research Institute, November 2002. (W) [http://www.pacificresearch.org/docLib/2002\\_Forward\\_to\\_Nanotech.pdf](http://www.pacificresearch.org/docLib/2002_Forward_to_Nanotech.pdf)
- Jane Macoubrie, “Informed Public Perceptions of Nanotechnology and Trust in Government,” Project on Emerging Nanotechnologies, September 2005. (W) click on relevant link at: <http://www.nanotechproject.org/reports>

## **C. HOW TECHNOLOGY AFFECTS POLITICS**

### **13. Technology, socioeconomic change, and the impact on politics: the case of information technology and “offshoring” (November 5)**

*The course now turns from how politics affect technology and technological activities to a discussion of how technology can change politics. Today’s session looks at how information technology lets companies move many jobs overseas and examines the related politics of “offshoring”.*

- Instructor’s Note, “Technology, Socioeconomic Change, and the Impact of That Change on Politics: The Case of Information Technology and Offshoring.” (IN)
- Lael Brainard and Robert E. Litan, “‘Offshoring’ Service Jobs: Bane or Boon – and What to Do?” Policy Brief #132, The Brookings Institution, April 2004. (W) <http://www3.brookings.edu/comm/policybriefs/pb132.pdf>

- L. Josh Bivens, Economic Policy Institute, “EPI Issue Guide: Offshoring” and “Offshoring: Frequently Asked Questions.” (W)  
[http://www.epinet.org/issueguides/offshoring/epi\\_issue\\_guide\\_on\\_offshoring.pdf](http://www.epinet.org/issueguides/offshoring/epi_issue_guide_on_offshoring.pdf)
- Daniel W. Drezner, “The Outsourcing Bogeyman,” *Foreign Affairs*, May/June 2004. (W) <http://www.foreignaffairs.org/20040501faessay83301/daniel-w-drezner/the-outsourcing-bogeyman.html>
- Alan S. Blinder, “Offshoring: The Next Industrial Revolution,” *Foreign Affairs*, March/April 2006. (W)  
<http://www.foreignaffairs.org/20060301faessay85209/alan-s-blinder/offshoring-the-next-industrial-revolution.html>

**NOTE: ON NOVEMBER 5, THE SECOND SHORT PAPER IS DUE**

**14. Technology’s impact on political institutions: two Congressional examples (November 7)**

*New technologies can also affect power within and among institutions, leading to both deliberate actions and unintended consequences. Today we look at two examples from the history of Congress. The first is the role that air conditioning played in the rise of the Republican Party in the South. The second examines how Congress, faced with declining influence over increasingly technical policy issues, created its Office of Technology Assessment in 1972 to give itself better information and more clout with executive agencies. (Congress later abolished OTA, in 1995.)*

- Nelson W. Polsby, excerpts from *How Congress Evolves: Social Bases of Institutional Change*. (R)
- Bruce Bimber, “Building OTA: The Separation of Powers,” chapter 4 in *The Politics of Expertise in Congress: The Rise and Fall of the Office of Technology Assessment*. (R)

**15. The impact of television and the Internet on political life I (November 12)**

*The enthusiasm of Americans for joining social and civic associations has always been one strong point of American democracy. But in a famous article, followed by a book, Harvard political scientist Robert Putnam argues that American participation in social and civic organizations has fallen dramatically in recent decades. He then asks, why? One major factor, he says, is television. People stay home and watch alone rather than doing things with friends and colleagues. He then asks whether the Internet will be good or bad for American democracy. Putnam’s arguments have provoked both praise and criticism.*

- Robert D. Putnam, “The Strange Disappearance of Civic America,” *The American Prospect*, December 1, 1996. (W)  
<http://www.prospect.org/cs/articles?articleId=4972>
- Robert D. Putnam, “Against the Tide? Small Groups, Social Movements, and the Net,” chapter 9 in *Bowling Alone*. (R)
- Garry Wills, “Putnam’s America,” *The American Prospect*, July 17, 2000. (W)  
[http://www.prospect.org/cs/articles?article=putnams\\_america](http://www.prospect.org/cs/articles?article=putnams_america)

- Robert D. Putnam, “1996: The Civic Enigma,” *The American Prospect*, May 22, 2005. (W) [http://www.prospect.org/cs/articles?article=1996\\_the\\_civic\\_enigma](http://www.prospect.org/cs/articles?article=1996_the_civic_enigma)

**NOTE: ON NOVEMBER 12, ONE-PAGE PROPOSALS FOR THE COURSE’S FINAL PAPERS ARE DUE**

**16. The impact of television and the Internet on political life II (November 14)**

*The popularity of Web-based organizations such as MoveOn and the apparent success of some campaign Web sites, notably Howard Dean’s in 2004, has led to a debate about how new information technologies will affect political mobilization, electoral strategies, and ultimately the nature of American democracy. Today’s readings echo the questions raised by Putnam, while also looking in more detail at the political effects of the Internet.*

- Bruce Bimber, excerpts from *Information and American Democracy: Technology in the Evolution of Political Power*. (R)
- Instructor’s Note, “Readings on How Political Organizations, Activists, and Campaigns Use the Internet.” (IN)

**17. How presidential candidates use the Web (November 26)**

*Today, large numbers of citizens use the Web for information, blogging, and political mobilization. In this environment, the Web offers new opportunities for presidential candidates to disseminate messages, raise funds, and mobilize supporters. So how in fact are presidential candidates using the Web? And are some candidates better at using it than others?*

- Instructor’s Note, “How Presidential Candidates Can and Do Use the Web.” (IN)
- Noriko Hara and Youngmin Jo, “Internet politics: A comparative analysis of U.S. and South Korea presidential campaigns, *First Monday*, September 2007. (W) [http://www.firstmonday.org/issues/issue12\\_9/hara/index.html](http://www.firstmonday.org/issues/issue12_9/hara/index.html)
- Lee Rainie and John Horrigan, Pew Internet & American Life Project, “Election 2006 Online,” January 17, 2007. (W) [http://www.pewinternet.org/pdfs/PIP\\_Politics\\_2006.pdf](http://www.pewinternet.org/pdfs/PIP_Politics_2006.pdf)

**NOTE: ON NOVEMBER 26, THE THIRD SHORT PAPER IS DUE (AS PART OF THE CLASS ON CANDIDATE WEB SITES)**

**18. The California controversy over electronic voting machines (November 28)**

*Electronic voting machines are a new technology that have significant benefits (including helping disabled people vote) but which also have generated major controversy, especially in California. Electronic voting machines are thus an example of how, unintentionally, new technologies can affect public perceptions of the reliability and fairness of democratic procedures.*

- Instructor’s Note, “Debates Nationally and in California Over Electronic Voting Machines.” (IN)

- Matt Bishop, U.C. Davis, “Overview of Red Team Reports,” July 2007. (W)  
[http://www.sos.ca.gov/elections/voting\\_systems/ttbr/red\\_overview.pdf](http://www.sos.ca.gov/elections/voting_systems/ttbr/red_overview.pdf)
- Eric R. Fischer, “Election Reform and Electronic Voting Systems (DREs): Analysis of Security Issues,” Congressional Research Service, Library of Congress, November 4, 2003. (W)  
<http://www.epic.org/privacy/voting/crsreport.pdf>
- Field Research Corporation, “Voter Confidence in Touch Screen Voting Systems No Different Than Its Confidence in Other Vote Methods,” August 23, 2007. (W)  
<http://www.field.com/fieldpollonline/subscribers/RIs2240.pdf>

**19. The origins of the NSA’s warrantless surveillance program and the program’s possible impacts on security, privacy and trust (December 3)**

*How the government uses surveillance technologies to monitor citizens affects the nation’s security, personal privacy and freedom, and how much citizens trust their leaders. In December 2005, The New York Times reported the existence of a secret National Security Agency (NSA) program for “warrantless wiretaps” – a program that allegedly monitors voice and Internet communications between individuals in the United States and individuals overseas, and does so without court-approved search warrants. While much of this program remains secret, press reports and lawsuits against the program have provided details. What are the political and technological origins of this program, how have Congress and the courts reacted to it, and what are its implications for security, privacy, and trust? The Instructor’s Note contains a set of readings on this topic.*

- Instructor’s Note, “The Politics of the National Security Agency’s Warrantless Electronic Surveillance Program.” (IN)
- K.A. Taipale, “Foreign Intelligence Surveillance Modernization: Reconciling Signals Intelligence Activity with Targeted Wiretapping,” Statement before the Senate Select Committee on Intelligence, May 1, 2007. (W)  
<http://intelligence.senate.gov/070501/taipale.pdf>
- James X. Dempsey, “Foreign Intelligence Surveillance Act,” Statement before the Senate Select Committee on Intelligence, May 1, 2007. (W)  
<http://intelligence.senate.gov/070501/dempsey.pdf>

**D. CONCLUSION: DEMOCRACY AND TECHNOLOGY**

**20. Democracy and technology (December 5)**

*To conclude the course, we return to a large question: what types of democratic control of technology – and control of technology’s effects on society – are possible or desirable? Who can and should make the key decisions today about the development and use of technology: elected officials, technical experts, senior executives in government and corporations? What would a more “democratic” system for guiding technology look like, what techniques for increasing public participation are available (including “deliberative democracy” and Danish-style*

*consultation), and in what ways would a more democratic system be desirable and perhaps not so desirable?*

- Richard Slove, “Technological Politics As If Democracy Really Mattered,” chapter 10 in Teich, editor, *Technology and the Future*, Ninth Edition. (R)
- Carmen Sirianni and Lewis Friedland, “Deliberative Democracy.” (W) <http://www.cpn.org/tools/dictionary/deliberate.html>
- James S. Fishkin, “Deliberative Polling: Toward a Better-Informed Democracy,” Center for Deliberative Democracy, Stanford University. (W) <http://cdd.stanford.edu/polls/docs/summary/>
- Bruce Jennings, “Representation and Participation in the Democratic Governance of Science and Technology,” chapter 10 in Goggin, editor, *Governing Science and Technology in a Democracy*. (R)

**NOTE:**

**FINAL PAPERS ARE DUE BY 11:00 P.M. ON THURSDAY, DECEMBER 13**

**Acknowledgements:** Special thanks to Todd La Porte, James Desveaux, Christopher Hill, Ken Jacobson, and Rebecca Slayton for suggesting ideas and readings for this course.