

Science, Technology, and Public Policy  
Freshman Seminar (FRS 159)  
Princeton University  
Fall 2018  
Room T-3 Blair

Over the last two and a half centuries rapid developments in science and technology have transformed our world and the goal of this seminar is to assess the contemporary role of public policy [actions by governments within market orientated economies] in enhancing the vitality of the scientific and technological enterprise as a strategy to reach particular policy goals like economic prosperity and/or national defense needs and/or promoting national health and/or dealing with matters like climate change or developments on the scientific frontier. We will also consider the role of governmental regulations as they impact the scientific agenda such as the use of human subjects in scientific experiments, or environmental regulations etc.

While the focus of the seminar will be on contemporary science policy we will also want to gain some insight on how such policies evolved over time and what ethical issues that might have to be considered.

The seminar will proceed *in part* through a kind of case study method by focusing on specific topics of contemporary concern [e.g. energy and climate] although all the issues we will discuss involve matters on or near the scientific and/or technological and/or policy frontier and all readings to be assigned are written for the “educated” public. The seminar also will have a secondary focus on the ethical and legal issues that can arise in these contexts as well as the roles of scientists both as advisors on science policy and as advocates for particular scientific causes including their own. These different but overlapping roles contain many inherent and potential conflicts of interest that have to be balanced, understood, and evaluated.

**Prerequisites:** There are no prerequisites save an interest in the subject. In particular no previous college courses, or advanced “AP” courses in science, mathematics, or politics/government are assumed.

**Requirements and Grading:** Attendance at **and** adequate preparation for **ALL** meetings of the seminar are **required**. If unusual circumstances require an exception to this policy the student will be asked to submit a 5-7 page essay on a topic covered during the missed seminar meeting. **A seminar is a cooperative activity and as such your classmates are dependent on the quality of your weekly preparations and participation in discussions.** In addition, each member of the seminar will be assigned to a small team that will be expected to lead a number of our discussions on particular topics. These presentations should be accompanied by a brief essay [e.g., 5 pages double spaced] summarizing what you have to say about the assigned issue. The nature of your argument and evidence is much more important than the “production

values” of your presentation. These essays/presentations [including any ‘power point type material’ if you intend to use it] should be distributed to all members of the seminar 48 hours before the seminar meets. The presentations themselves should be about 15-20 minutes in length.

There will be a midterm exam given during the second half of the October 25<sup>th</sup> meeting (approximately 90 minutes).

Finally each student must submit no later than “Deans Date” a final project consisting of an extended essay of about 5000 words on a topic dealing with an issue[s] at the intersection of science, technology, and public policy. These extended essays could cover topics taken up during the semester or other areas that deal with the overall subject matter of the seminar. All students should submit a 2-3 page written proposal regarding their proposed research paper before December 1, 2017 so that I might review it to ensure that both the subject matter and the scope of the essay are appropriate.

ALL ‘WRITTEN’ ASSIGNMENTS MUST BE SUBMITTED IN “WORD” FORMAT. [I strongly prefer [i.e. I am used to] the editing format on Word.]

**Please remember that all written work submitted must be your work in the sense that it should be easy for the reader to identify which ideas came from some other source and which represent your own ideas. I have no objection to the use of any legitimate/reliable source as long as you identify these sources through footnotes, explicit quotes where necessary and bibliographic references. In preparing your written work, therefore, make sure to keep a running list of those ideas/hypotheses/speculations etc. either formal or informal that you have consulted whatever their source.**

Your course grade will be assembled as follows: Your final essay will count for 50% of your grade; your liveliness and thoughtfulness in class discussions will count for 15% of your grade; the mid-term in class exam [Oct. 25<sup>th</sup>] for 20% of your grade; and your more formal written class presentations including the associated essays for 15% of your grade.

**This seminar is a lap-top free zone.** The only exception is if one is making a more formal presentation to the seminar and feels that a power point presentation [or analogous technology] would be helpful.

The seminar may well have a more fluid form than may be suggested by the plans/readings set out below. Depending on the interests of the class we may spend more/less time than indicated on specific topics outlined here. In addition new topics may be introduced if there is sufficient interest.

In addition to the required readings outlined below it is often the case that the publications Nature and Science [freely available online to Princeton students] are useful sources for a lot of the material covered in this seminar, since parts of each issue of these magazines are devoted to the interested and thoughtful public. In addition the internet contains vast quantities of information on just about anything, but the challenge is to be sure you can separate the quality information from the rest.

### **Seminar Topics and Associated Readings**

#### **September 13<sup>th</sup>**

The *first* substantive issue we will address will focus on the complex relationship between science, technology, and economic growth as well as the inevitable anxieties that always accompany important movements on the technological and scientific frontier. This nexus is often critical to the relationship between science, technology, and public policy. We will also consider the variety of tools available to government to stimulate the vitality of the science/technology sector. We will then consider an interesting example of the relationship between science, technology, and public policy namely: the role of science and technology in the Allied successes in World War II and its aftermath [science for policy].

For this session only I will probably take up most of the “verbal” space since the members of the seminar may not yet have had a chance to engage fully with and reflect on the assigned readings and understand the requirements of class-based presentations.

#### **Readings:**

#### **Topic: Science and Technology, Economic Growth and Change**

Allen, Robert, C. “Global Economic History: A Very Short Introduction” Oxford University Press, Oxford 2011, pp.1-13.

Deaton, Angus, “The Great Escape: Health, Wealth and the Origins of Inequality”, Princeton University Press, Princeton. New Jersey, 2013, pp. 1-19, 325-329.

Gordon, Robert J, “The Rise and Fall of American Growth”, Princeton University Press, Princeton, New Jersey, 2016, pp. 1-19.

Madison, Angus, “Contours of the World Economy, 1-2030 AD”, Oxford University Press, Oxford, 2007. Chapter 2, pp. 69-105. [A reference resource only.]

Neal, Homer A., Smith, Tobin L., and McCormick, Jennifer B., "Beyond Sputnik, U.S. Science Policy in the 21st Century", University of Michigan Press, Ann Arbor, MI., 2011, pp. 3-47.

Shapiro, Harold T., "A Larger Sense of Purpose: Higher Education and Society", Princeton University Press, Princeton, New Jersey, 2005, pp. 120-163.

### **World War II:**

Hartcup, G, "The Effect of Science on the Second World War", Macmillan, London, 2000, pp. 1-17;

Overy, R., "Why the Allies Won", W. W. Norton and Company, Ltd., London, 1995, pp. 1-24.

**September 20<sup>th</sup>**. The **second** meeting of the seminar will adopt the format of a case study. We will review situations where ethical issues arising from developments on the scientific frontier impact public policies. We will consider three different but related scientific developments of recent decades namely: assisted reproductive technologies [ART]; somatic cell nuclear transfer cloning [including the potential cloning of human beings]; and human embryonic stem cell research. These new technologies could have a profound impact, for example, on our understanding of families and the appropriate role of technology in changing modes of human reproduction. The objective in this session of the seminar is to consider some cases where there is a significant overlap between science, public policy, and ethics. The seminar will start with the subject of ART and we will then examine somatic cell nuclear transfer cloning and human embryonic stem cell research.

### **Readings:**

Bowlby, Rachel, "A Child of One's Own: Parental Stories" Oxford University Press, Oxford, 2013. [A very engaging and thought provoking study of a variety of "parenthoods" as revealed in both ancient and modern literary sources.] Chapters 1 and 2, pp. 1-34.

"The California Institute for Regenerative Medicine: Science, Governance and the Pursuit of Cures", Institute of Medicine, The National Academies Press, Washington, DC, 2013, pp. 1-28. [http://books.nap.edu/openbook.php?record\\_id=13523](http://books.nap.edu/openbook.php?record_id=13523)

Cloning Human Beings: Report and Recommendations of NBAC, 2007, pp. i-v, 13-38, 62-84 (Government Report).

<http://bioethics.georgetown.edu/nbac/pubs/cloning1/cloning.pdf>

Cohen, I. Glenn and Eli Y. Adashi, "Embryo Disposition Disputes: *Controversies and Case Law*, The Hastings Center Report, Vol. 46, No. 4, July-August 2016, pp. 13-19.

Knowles, Lori, P. "The Governance of Reproductive Technology: International Models" in Reprogenetics: Law, Policy, and Ethical Issues, Lori P. Knowles and Gregory E. Kaebnick [eds], The Johns Hopkins University Press, Baltimore, 2007, pp. 127-143 [Chapter 5].

Robertson, John, "Children of Choice: Freedom and the New Reproductive Technologies", Princeton University Press, 1994, pp. 149-194.

Shapiro, Vivian et.al. "Complex Adoption and Assisted Reproductive Technology", The Guilford Press, New York, 2001, Chapter 8, pp.173-200.

Shonkoff, John P. "Science, Policy, and Practice: Three Cultures in Search of a Shared Mission", *Child Development*, Vol. 71 (1), pp. 181-187.

<http://onlinelibrary.wiley.com/doi/10.1111/1467-8624.00132/pdf>

Shue, Henry, "Ethical Dimensions of Public Policy", in The Oxford Handbook of Public Policy, M. Moran, M. Rein, and R. E. Goodin, (eds.), Oxford University Press, Oxford, 2006, pp. 709-728.

Singer, Peter, "Creating Embryos", in Thomas A. Mappes and D. Degrazia [eds], Biomedical Ethics, [5th edition], New York, McGraw Hill, 2001, pp. 534-541.

### **Further Readings (Optional):**

Furrow, Barry R., et. al., "Bioethics: Health Care Law and Ethics", 7<sup>th</sup> edition, West Publishing Company, St. Paul, Minnesota, 2013, Chapter 2, especially pp. 29-47 and pp. 113-190.

Griswold, Zara, "Surrogacy Was The Way: Twenty Intended Mothers Tell Their Stories", Nightengale Press, Gurnee, IL, 2005.

**September 27<sup>th</sup>**. The **third** meeting of the seminar will focus on an issue that is primarily associated with the rise of scientific medicine and the increasing desire to carry out experiments using human subjects beginning in earnest in the 19<sup>th</sup> century and continuing to the present day. We will discuss a series of examples where human

subjects may have been seriously abused and the impact of these events on the articulation and development of attitudes and government regulations related to the protection of human subjects. One of our foci will be on the nature and development of specific U.S. and International regulations regarding the protection of human subjects in a variety of settings.

### **Readings:**

Jonsen, A.R., "The Ethics of Research With Human Subjects: A Short History", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp. 5-10.

"The Nuremberg Code", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp.11-12.

"Declaration of Helsinki: Recommendations Guiding Medical Doctors in Biomedical Research Involving Human Beings", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp.13-15 (WMA).

"On the Protection of Human Subjects: U.S. Department of Health, Education, and Welfare's Institutional Guide", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp. 16-21.

"The Belmont Report: Ethical Principles and Guidelines for The Protection of Human Subjects of Research", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp. 22-28. <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>

"Institutional Review Boards", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp.54-61.

"Federal Regulations Regarding the Protection of Human Subjects of Research", Source Book in Bioethics: A Documentary History, A. R. Jonsen, R.M. Veatch, and L. Walters (eds.), Georgetown University Press, Washington, D.C., 1998, pp.62-75.

Freedman, B., "Equipoise and the Ethics of Clinical Research", in H. Kuhse, and P. Singer, (eds.), Bioethics: An Anthology, Oxford 2<sup>nd</sup> edition, Blackwell Publishers, 2006, pp. 513-519.

Jonsen, Albert R., The Birth of Bioethics, New York: Oxford University Press, 1998, pp. 125-158. Or Brody, Baruch A., The Ethics of Biomedical Research, New York: Oxford University Press, 1998, pp. 31-54.

Jonsen, Albert R., The Birth of Bioethics, New York: Oxford University Press, 1988, pp. 99-122.

Luna, F. and Macklin, R., "Research Involving Human Beings" in A Companion to Bioethics, Kuhse, H. and Singer, P. [eds], Wiley-Blackwell, 2<sup>nd</sup> edition, pp. 457-468.

Macneill, P. M., "Regulating Experimentation in Research and Medical Practice" in A Companion to Bioethics, Kuhse, H. and Singer, P. [eds], Wiley-Blackwell, 2<sup>nd</sup> edition, pp. 469-486.

United States, "Code of Federal Regulations, Title 45 Part 46" <http://www.ecfr.gov/cgi-bin/text-idx?SID=cfbb13c1285777da786d53b8fd021437&node=pt45.1.46&rgn=div5>

### **Further Readings [Optional]**

Lederer, S., "Subjected to Science: Human Experimentation in America Before the Second World War", The John Hopkins University Press, Baltimore, 1995.

### **October 4<sup>th</sup> and October 11<sup>th</sup>.**

The **fourth** and **fifth** meeting of the seminar focuses on an issue with implications for public policies on an international scale. The particular issue we will take up is the implication for public policy of the suggested role of human activity in global warming and shifts in large scale climate patterns. This topic requires an appreciation of the complex and dynamic nature of the world's climate patterns, the potential impact of human activity on this dynamic, and the role of public policy in potentially mitigating and/or adapting to any undesirable long-term changes that result from the impact of human activity on the world's climate patterns. Climate change is inherently a global issue and any policies designed to deal with the associated challenges will eventually have to be international in scope. These two sessions of the seminar will focus on what we seem to know, what we do not know, and the prospects for international agreements to deal with the issues.

### **Readings:**

"Advancing the Science of Climate Change", National Academies Press, Washington D.C. 2010, pp. 3-5, 27-83 ([http://www.nap.edu/catalog.php?record\\_id=12782](http://www.nap.edu/catalog.php?record_id=12782)).

Aldy, J.E. and Stavins, R.N., "Using the Market to Address Climate Change", Daedalus, Volume 141, No. 2, Spring 2012, pp. 45-57.

[http://www.mitpressjournals.org/doi/pdfplus/10.1162/DAED\\_a\\_00145](http://www.mitpressjournals.org/doi/pdfplus/10.1162/DAED_a_00145)

Barrett, Scott, "Credible Commitments, Focal Points, and Tipping" in Climate Change and Common Sense: Essays in Honor of Tom Schelling, Robert Hahn and Alistair Ulph [eds.], Oxford University Press, Oxford, 2012, pp. 29-49.

"Climate Change Impacts in the United States", U.S. Global Research Program.

<http://nca2014.globalchange.gov/> Chapters 1 and 2 [pp. 7-49].

Cotton, W.R. and Pielke Sr., Rodger A, "Human Impacts on Weather and Climate", 2<sup>nd</sup> edition, Cambridge University Press, New York, 2007, pp. 243-253. [A modest and thoughtful, but skeptical view on certain climate change issues.]

The Economic Report of the President (2105) and The Annual Report of the Council of Economic Advisors (2015), Chapter 6, pp. 241-289. This is a single volume with a web address as follows:

[https://www.whitehouse.gov/sites/default/files/docs/cea\\_2015\\_erp.pdf](https://www.whitehouse.gov/sites/default/files/docs/cea_2015_erp.pdf)

Gardiner, Stephen, M., "A Perfect Moral Storm: Climate Change, International Ethics and the Problem of Moral Corruption", in Climate Ethics: Essential Readings, Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue, [eds], Oxford University Press, Oxford, 2010, Chapter 4.

"The Global Warming Reader", Bill McKibben [ed.], Penguin Books, New York, 2012 [First Five Essays].

Hegert, Gabi and Stott, Peter, "From Past to Future Warming", Science, Vol. 343, February 21, 2014, pp. 844-845.

<http://www.sciencemag.org/content/343/6173/844.full.pdf?sid=9fd7c175-7c47-4045-ab33-3032104a6296>

Keohane, R.O. and Victor, D.G., "The Transnational Politics of Energy", Daedalus, Volume 142, No. 1, pp. 97-109.

[http://www.princeton.edu/system/files/research/documents/keohaner\\_the\\_transnational\\_politics\\_of\\_energy.pdf](http://www.princeton.edu/system/files/research/documents/keohaner_the_transnational_politics_of_energy.pdf)

Oreskes, N. and Conway, L. M., "The Collapse of Western Civilization: A View from the Future", Daedalus, Volume 142, No. 1, pp. 40-58.

Oreskes, N. and Conway, L.M., "Merchants of Doubt", Bloomsbury Press, New York, 2010, Chapter 6, pp. 169-215.

Ostrom, E. Burger, L. Field, C. B. Norgaard, R.B. Policansky, D., “Revisiting the Commons: Local Lessons, Global Challenges”, in *Science*, April 9, 1999, Volume 284, pp. 278-282. <http://www.sciencemag.org/content/284/5412/278.full.pdf?sid=b2b7fe0-596b-4a68-97f9-597c7e2ec467>

Pilkey, Orin H. and Pilkey-Jarvis, Linda, “Useless Arithmetic: Why Environmental Scientists Can’t Predict the Future”, Columbia University Press, New York, 2007, Chapters 2 (pp. 22-44) and 9 (pp. 182-204).

Stern, Nicholas, “Why Are We Waiting? The Logic, Urgency, and Promise of Tackling Climate Change”, The MIT Press, Cambridge, Massachusetts, 201, pp. 3-32.

Science Magazine, Vol. 343, February 21, 2014, “Atlantic Current Can Shut Down For Centuries, Disrupting Climate”, p. 831.

<http://www.sciencemag.org/content/343/6173/831.full.pdf?sid=0972ccd9-853f-4ef0-b85e-3a6a7dde7801>

“United Nations Framework Convention on Climate Change, United Nations, 1992”. (<http://unfccc.int/resource/docs/convkp/conveng.pdf>) (A reference document.)

**October 18th.** The **sixth** meeting of the seminar will focus on a case study of an important national issue that also lies at the intersection of science, technology, and public policy. In particular we will discuss the various controversies currently surrounding **energy policy** in the United States and how the issues are shaped by existing and emerging technologies. The focus will be on the technological options available and the role of scientists and public policy makers in addressing the national security, environmental, and economic issues that swirl around the energy sector. In summary, the U.S. energy sector is being buffeted by a portfolio of national security, environmental, sustainability, and economic concerns. What are the facts, what are the options, what is to be done and who should do it?

### **Readings:**

InterAcademy Council, “Lighting the Way: Toward a Sustainable Energy Future”, Executive Summary, InterAcademy Council, Amsterdam, 2007, pp. XVII to XXXI.

McNutt, Marcia, “Keystone XL”, *Science Magazine*, American Association for the Advancement of Science, Washington D.C., Vol. 343, February 21, 2014, p. 185. <http://www.sciencemag.org/content/343/6173/815.full.pdf?sid=0af32099-4330-461a-9645-7a3c4284f1f4>

[Nuffield Council on Bioethics: Biofuels: Ethical Issues.](http://nuffieldbioethics.org/project/biofuels-0/)  
<http://nuffieldbioethics.org/project/biofuels-0/>

“Overview and Summary of America’s Energy Future: Technology and Transformation”, Summary Edition, National Academy Press, Washington D.C., 2010, pp. 1-6, 9-34, 35-79. [http://www.nap.edu/download.php?record\\_id=12943](http://www.nap.edu/download.php?record_id=12943)

“Overview and Summary of America’s Energy Future: Technology and Transformation“, National Academy Press, Washington D.C., 2010, pp. 1-48.  
[http://www.nap.edu/catalog.php?record\\_id=12943#toc](http://www.nap.edu/catalog.php?record_id=12943#toc)

“Renewable Energy Sources and Climate Change Mitigation: Special Report of the IPCC”, Cambridge University Press, Cambridge, 2012, pp. 6-26.

Science Magazine, Special Section: “The Gas Surge”, June 27, 2014, pp. 1465-1475. This section contains a number of short articles.  
<http://www.sciencemag.org/content/344/6191/1464.full.pdf?sid=da270ec2-2038-4476-bc0f-faca95e7d4fa>

Tilman, David and Clark, Michael, “Food Agriculture and the Environment: Can We Feed the World and Save the Earth” Daedalus, Fall 2015, pp. 8-18

**October 25<sup>th</sup>**. Our **seventh** meeting focuses on the issues surrounding Eugenics from the late 19<sup>th</sup> and early 20<sup>th</sup> century until the present where new developments on the scientific frontier has led to a contemporary “rebirth” of interest in this subject. Eugenics covers, very roughly speaking, the role of public policy and or private decisions in “managing” the gene pool of future generations. In practice Eugenics can be conceptualized as dealing with a very broad range of practices including practices that prevent life, practices that promote a fitter life, practices that generate more life, and practices that end life. We will trace the development of the Eugenics movement in the U.S. as one example of the public policy impact at a particular intersection of social norms, aspirations, prejudices and science or pseudo-science. If time allows we will also consider briefly the implications of contemporary developments in neuroscience that could have implications for our legal system [readings by Aguirre and Edgar are only tentative].

**THE SECOND HALF OF THE OCTOBER 25<sup>TH</sup> MEETING [APPROXIMATELY 90 MINUTES] IS RESERVED FOR THE MID-TERM EXAM.**

**Readings:**

Bashford, Alison and Levine, Philippa [eds,] "The Oxford Handbook of the History of Eugenics" Oxford University Press, Oxford, 2010, pp.3-39,134-153.

Black, E, "War Against The Weak", Four Walls Eight Windows, New York, 2003, pp. 3-41.

Bruinius, Harry, "Better For All the World" Alfred A. Knoph, New York 2006, pp. 3-19, 357-365.

Caplan, A.L., "What is Wrong with Eugenics?" in P. Sloan Controlling our Destinies, University of Indiana Notre Dame Press, Notre Dame, IN, 2000, pp. 209-222.

Comfort, Nathaniel, "The Science of Human Perfection", Yale University Press, New Haven, 2012, Preface and Epilogue pp. x – xii.

Harris, John, "Enhancing Evolution: The Ethical Case for Making People Better", Princeton University Press, Princeton, NJ, 2007, pp. 19-35.

Leonard. Thomas, C., "Illiberal Reformers", Princeton University Press, Princeton, NJ, Chapter 7, pp. 109-128.

Mukherjee, Siddhartha, "The Gene", Scribner, New York, 2016, pp. 64-85

Paul, Diane, "Controlling Human Heredity: 1865 to the Present", Atlantic Highlands, NJ, 1995, pp. 1-21.

Paul, Diane, "On Drawing Lessons from the History of Genetics" in Reprogenetics: Law, Policy, and Ethical Issues, Lori P. Knowles, and Gregory E. Kaebnick [eds], The Johns Hopkins University Press, Baltimore, 2007, pp. 3-19, [Chapter 1].

**November 8<sup>th</sup>**. In the **eighth** meeting of the seminar we leave the case approach for a broader and more historical consideration of the role of the U.S. government both as a consumer of new scientific knowledge [e.g. for defense, for building of a national infrastructure, for guiding various federal policies, etc.] and as a direct sponsor [for a variety of reasons] of research and development. In particular we will sustain some focus on the tools available to government to impact the vitality of the R&D sector as well as the Governments capacity to utilize developments on the scientific frontier to achieve important policy purposes. We will focus both on the policy tools available to stimulate private interests in investing in the scientific enterprise and on the government's more direct involvement in science and technology. Our discussion of the contemporary science policy tool kit will include the following: the mission agencies

(NIH, NSF, DoD, DoE, etc.); the intramural laboratories; federal procurement policies; federal sponsorship of research and development, patent and intellectual property laws/policies; tax policy, ...etc. In addition, we will consider the evolution of the U.S. Science Budget and the “micro” process of allocating the U.S. Science Budget.

### **Readings:**

REVIEW PREVIOUS READINGS BY Allen, Deaton, and Gordon listed in the readings for our first meeting.

Neal, Homer A., Smith, Tobin L., McCormick, Jennifer B., *Beyond Sputnik: U.S. Science Policy in the 21st Century*, University of Michigan Press, Ann Arbor, 2008, Chapter 6, pp. 93-116.

Rich, Andrew, *“Think Tanks, Public Policy, and the Politics of Expertise”*, Cambridge University Press, Cambridge, MA, 2004, Chapter 2, pp. 29-71.

“Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Future,” National Academies, National Academy Press, Washington D.C. 2007, Chapter 2, pp. 41-67. ([http://www.nap.edu/catalog.php?record\\_id=11463](http://www.nap.edu/catalog.php?record_id=11463)).

**November 15<sup>th</sup>**. The *ninth* meeting of the seminar will focus on the general nature of the contemporary policy process in the U.S. The aim of this session is to gain a fuller appreciation of just how perceived problems generate potential solutions and how Congress and the Administration both decide to act and choose the vehicle for action. We will focus on policies that impact science and technology. We will also consider other actors in the policy process such as Washington “think tanks” [conservative, liberal, and independent], advocacy groups, policy ‘wonks’, etc.

### **Readings:**

Kingdon, John W., *“Agendas, Alternatives, and Public Policies”* (second edition). Longman Classics in Political Science, 2003, Chapter 2, pp. 21-44, Chapter 3, pp. 45-70.

Neal, Homer A., and Smith, Tobin L., and McCormick, Jennifer B., *“Beyond Sputnik: U.S. Science Policy in the 21st Century”*, University of Michigan Press, Ann Arbor, MI, 2011, pp. 52-69.

Pielke, R.A., Jr., *“The Honest Broker”*, Cambridge University Press, Cambridge, MA, 2007, pp. 1-21.

“The California Institute For Regenerative Medicine: Science, Governance, and the Pursuit of Cures” Institute of Medicine, National Academies Press, Washington D.C., 2013, pp. 29-45. [http://www.nap.edu/download.php?record\\_id=13523](http://www.nap.edu/download.php?record_id=13523)

Tollestrup, Jessica, “The Congressional Appropriations Process: An Introduction”, Congressional Research Service, Washington D.C., 2012. <http://fas.org/sqp/crs/misc/97-684.pdf>

Zahariadis, Nikolas, “The Multiple Streams Framework: Structure, Limitations, Prospects”, in Theories of the Policy Process, Paul Sabatier [ed.], Westview Press, Boulder, Colorado, 2007, pp. 65-87.

**November 29<sup>th</sup>**: Our **tenth** meeting will focus on Public Health initiatives especially where government policy must balance private and public interests. We will consider the government’s power [at both the Federal and State level] to coerce and the limits of Federal and/or State power in this arena. We will use as examples the issues surrounding vaccines, public health, and the meaning of liberty. In this respect we will be considering the population perspective versus the individual perspective, matters of prevention and social justice, and surveillance versus privacy. Many of these issues can be illuminated by considering the history of vaccines in the U.S. and the associated controversies they caused. To provide additional context we will review a contemporary and controversial set of issues surrounding both marijuana and the new HPV vaccine.

### **Readings:**

American Academy of Arts and Sciences, “Public Trust in Vaccines: Defining a Research Agenda”, Cambridge, Massachusetts, American Academy of Arts and Sciences, 2014, pp. 1-11. <https://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/publicTrustVaccines.pdf>

Colgrove, J. and Bayer, R. “Manifold Restraints: Liberty. Public Health and the Legacy of Jacobson v Massachusetts”, American Journal of Public Health, April 2005, Vol 5. No. 4., pp. 571-576. <http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2004.055145>

Colgrove, J. “The Ethics and Politics of Compulsory HPV Vaccination”. The New England Journal of Medicine, December 7, 2006, pp. 2389-2391. <http://www.nejm.org/doi/pdf/10.1056/NEJMp068248>

Furrow, Barry R., et. al., “Bioethics: Health Care Law and Ethics”, 7<sup>th</sup> edition, West Publishing Company, St. Paul, Minnesota, pp. 2-13, 565-579.

Gostin, Lawrence O., “Public Health Law: Power, Duty, Restraint”, A Theory and Definition of Public Health Law, 2<sup>nd</sup> Edition, University of California Press, 2008, pp. 3-41.

Gostin, Lawrence O., “Mapping the Issues: Public Health Law and Ethics”, Public Health Law and Ethics: A Reader, University of California Press, Berkeley, 2010, pp. 1-19.

Institute of Medicine, “Adverse Effects of Vaccines: Evidence and Causality”, Institute of Medicine of the National Academies, Washington D.C., 2011, pp. ix-x1, 1-24.

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Institute of Medicine, “The Future of the Public’s Health in the 21<sup>st</sup> Century”, Institute of Medicine of the National Academies, Washington, D.C. 2013, pp. 19-41; 403-405.

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[National Library of Medicine, MedlinePlus](http://www.nlm.nih.gov/medlineplus)

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[National Institute of Drug Abuse \[NIDA\]](http://www.drugabuse.gov/publications/research-reports/marijuana/letter-director)

<http://www.drugabuse.gov/publications/research-reports/marijuana/letter-director>

Powers, Maddison, and Faden, Ruth “Social Justice: The Moral Foundations of Public Health and Health Policy”, Oxford University Press, Oxford, 2006, Chapters 2.2 and 4.

Rothstein, Mark, et.al. “Quarantine and Isolation: Lessons Learned from SARS: A Report to the Centers for Disease Control and Prevention”, November 2003, Executive Summary.

Schwartz, Jason, L. “The First Rotavirus Vaccine and the Politics of Acceptable Risk”, *Milbank Quarterly*, Vol. 90, no. 2, 2012.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0009.2012.00664.x/pdf>

Wailoo, Keith, Livingston, J. Epstein, S., and Aronowitz, R., “Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine’s Simple Solutions”, The Johns Hopkins University Press. Baltimore, MD, 2010, Chapters 1 & 2.

Willrich, M, “Pox, An American History”, Penguin Books, 2012, pp. 285-336.

Willrich, M., "The Least Vaccinated of Any Civilized Country: Personal Liberty and Public Health in the Progressive Era", in The Constitution and Public Policy in U.S. History, J. Zelizer and B. Schulman [eds.], Pennsylvania University Press, University Park, Pennsylvania, 2009, pp.76-90.

**December 6<sup>th</sup>.** Our ***eleventh*** meeting will focus on a comparative study of public policies in science and technology in a suite of advanced industrialized countries. We will be particularly interested in the different policy tools used in other countries as well as their overall commitments to science and technology. Each member of the seminar will report on the overall science policy of a particular assigned country

### **Readings:**

AAAS Report XXXVIII, "Research and Development FY 2014", American Association for the Advancement of Science, Washington, D.C., 2012, pp. 23-28, 51-61, 181-194.  
<http://www.aaas.org/report/aaas-report-xxxviii-research-and-development-fy-2014>

National Science Foundation, Science and Engineering Indicators 2016.  
<http://www.nsf.gov/statistics/seind12/slides.html>

### **Special Course Pack**

**December 13<sup>th</sup>.** Our ***twelfth*** and last session of the seminar will be devoted to a currently lively and controversial topic surrounding Physician Assisted Suicide. This debate has received new attention in part because of various new technologies. We will focus on a comparative study of evolving public policies and legal rulings in Canada and the United States. This is an example of the inter-relationship of ethical issues, public policy and the law.

### **Euthanasia and Physician-Assisted Suicide**

Cultural attitudes to physician-assisted suicide range from outright opposition to its glorification under certain circumstances and over time public policies in this respect reflected these various cultural attitudes and norms. Clearly attitudes towards refusing treatment and physician-assisted suicide (PAS) and the role of public policy in these respects remains highly contested. As regards these matters you might want to keep in mind the fact that it is estimated that about 70% of those that die in the hospital do so after someone's decision to refuse, withhold, or withdraw treatment.

Death and Dying: Assisted Suicide

Gorsuch, Neil M., "The Future of Assisted Suicide and Euthanasia", Princeton University Press, 2006, Chapter 3, pp. 19-46.

Vaughn, Lewis, "Bioethics: Principles, Issues and Cases", Oxford University Press, Oxford, [3<sup>rd</sup> edition], Chapter 10, pp. 625-715.

Sacred Congregation for the Doctrine of the Faith, "Declaration on Euthanasia" in: Kuhse, H., Singer, P., *Bioethics: An Anthology*, 2<sup>nd</sup> Edition, Oxford: Blackwell, 2006, pp. 276-280.

Span, Paula, "Physician Aid in Dying Gains Acceptance in the U.S.", The New York Times, January 17, 2017.

The Canadian Case: Consult 'Course Pack'.

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August 2017