University of Massachusetts at Boston

Public Policy Program, McCormack Graduate School of Policy Studies

Science in a Changing World graduate track, College of Advancing & Professional Studies

Scientific and Political Change

PPol G 749/ CrCrTh 649

Syllabus, Spring 2018

Prior to WW II, the US government played a relatively small role in the support of science, especially outside of its own institutions. That situation changed dramatically with the war and the Cold War that followed. We explore how these events transformed the role of science in United States life, vastly enhancing the prestige of scientists, and shaping the extent and the nature of federal involvement in science. These and later developments in the USA and internationally, including the proliferation of new forms of citizen participation and the commercialization of academic research, raise important questions about the appropriate role of science and scientists in shaping political change and the changing meanings of democratic control of science.

Components of the syllabus:

I. Quick access to key information and links that should be bookmarked on your browser

followed by

II. Information to get started, orient yourself, and refer back to from time to time.

III. Contract: What is expected overall.

IV. Schedule of classes: What is expected each session and why -- how each session contributes to the unfolding of the course (starting with list of links to specific sessions).

POST-IT the start of each component in your printed version of this syllabus

Instructor	Peter Taylor , Critical & Creative Thinking Program , Public Policy program
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Phone	617-287-7636

Office	Wheatley 4th floor, room 170
Office hours (at http://bit.ly/pjthangout or in office):	Tuesday 1.40-3.40pm, Sign up at ptaylor.wikispaces.umb.edu/PTOfficeHours, or by arrangement
Class time & location	Tuesdays 4-6.45pm, 1/30-5/8 (no class 1/22); W 4-170 or by zoom
URL for online access	http://bit.ly/749zoom
Report glitches in online materials	using this form
BOOKMARK THIS! Syllabus	ppol749.wikispaces.umb.edu/Syllabus18, with a menu of useful links at the top right

II. Information to get started, orient yourself, and refer back to from time to time

POINTERS about the preparation assumed for this course (in lieu of formal prerequisites):

- Graduate standing or permission of instructor. In lieu of other formal prerequisites, your previous studies should have prepared you to formulate and pursue library and internet research and to write, seek feedback, and revise in systematic and efficient ways with minimal supervision (see research and study competencies).
- You should be prepared to make time outside class--at least 6.5 hours/week--for undistracted work on the course and to view each assignment and each session in relation to the unfolding of learning during the course. (That is, do not expect the syllabus and online links to allow you to cut to the chase about what to do for the following day's class.)

OVERVIEW: After an initial session in which students are introduced to the "Project- (or problem-) based learning" (PBL) format, the course consists of 4 three-session units based on cases concerning scientific and political change. The PBL approach allows students to shape their own directions of inquiry and develop their skills as investigators and prospective teachers. Students' inquiries are guided by individualized bibliographies co-constructed with the instructor and informed by the projects of the other students.

LEARNING OBJECTIVES: By the end of the semester, you will have:

1. learned about analyses of the political influences on the development of science and technology, and, reciprocally, of influences of such developments on political processes and possibilities;
2. re-engaged with yourselves as avid learners and inquirers; and
3. organized resources that prepare you to teach and engage students and members of the relevant communities to participate in questioning and shaping the direction of scientific and social changes.

OVERVIEW (cont.): What makes the re-engagement in #2 possible is a combination of:

- the tools and processes used for inquiry, dialogue, reflection, and collaboration;
- the connections you make with other students (and guests) who bring diverse interests, skills, knowledge, experience, and aspirations to the process; and
- your contributions to the topic laid out in the scenarios from which the PBL units begin.

The broad topics covered by the PBL units are below. Each case has been revised in 2018 so that students address a larger question: What theory and research can inform what is to be done in this emerging era in which people can no longer rely on assuming that the arc of history bends towards progress in science, in institutions that provide for the welfare of the populace, and in citizen engagement to bring the other two arcs together?

1. Science-policy connections (to improve responses to extreme climatic events).
2. Science and democratic participation (=the rise and fall of grassroots or citizen initiatives in shaping the directions taken in science and technology and draw attention to their effects.)
3. Comparatives perspectives. (A comparison of policy development in U.S. and Europe concerning infrastructure built so that new genetic knowledge is useful.)
4. Education and civic engagement (How to teach and engage others to participate in questioning and shaping the direction of scientific and social changes?)

 TEXTS and MATERIALS

Frickel, S. and K. Moore (eds.) (2006). The new political sociology of science: institutions, networks, and power. Madison, WI, University of Madison, Wisconsin. (Available online via Ebrary   )

Felt, U., R. Fouché, C. Miller and L. Smith-Doerr, Eds. (2017). The Handbook of Science and Technology Studies. Cambridge, MA, MIT Press.

(Earlier edition available online via Ebrary   )

Recommended

- as source for many of the course tools & processes: Taylor, P. and J. Szteiter (2012) Taking Yourself Seriously: Processes of Research and Engagement, Arlington, MA: The Pumping Station (Available in hard copy from online retailers or as pdf from http://thepumpingstation.org   )
  Online links duplicate pages in this text, but, if you buy the printed or pdf text, you can refer to that instead of reading the pages online and you have a reference work to consult after the course.
- to help with writing: Daniel, D., C. Fauske, P. Galeno and D. Mael (2001). Take Charge of Your Writing: Discovering Writing Through Self-Assessment. Boston: Houghton Mifflin ("new" copies available   well below list price on amazon.com)

(See also Conlin; Elbow; Kanar; Perelman, et al.)

- as a more detailed guide on technical matters of writing scholarly papers: Turabian, K. L. (1996). A Manual For Writers of Term papers, Theses, and Dissertations. Chicago: University of Chicago Press (also in library's reference section).
- bibliographic software for references (see Citation tools   on library website)

Readings for the course consist primarily of individual articles and book chapters, most of which can be downloaded from password-protected page)

TECHNICAL SET-UP

Make bookmarks on your browser to quick access links (see sect. I of syllabus); Set up access to online

bibliographic databases from library; Arrange bibliographic software for references; Know your official @umb.edu student email address and password; Inform instructor re: which email of yours to use; Accept the invite (to your UMB email) to join the wiki; Accept the invite to join the wordpress blog; Organize your computer (e.g., separate folders/directories for course work, downloaded readings, etc., replicate this file organization on a flash drive or other backup medium, and have a system for synchronizing and backing up files--see research competencies for more detail and other suggestions.)

Face2face students: Bring laptop if you have one, registered for UMB wifi.

For students from a distance: Visit the zoom site for the course and set up any software needed. Establish high bandwidth internet access (e.g., ethernet cable into modem); Procure and use reliable headset; Practice on zoom muting when not speaking and screensharing of document.

All students: Make a visible reminder note to always rename files before submission starting 749XY (where XY are your initials) and put 749 in subject line of any email.

WRITING SUPPORT: For graduate students, see http://cct.wikispaces.umb.edu/writingsupport.

ACCOMMODATIONS: Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center (287-7430). The student must present these recommendations to each professor within a reasonable period, preferably by the end of the Drop/Add period.

CODE OF CONDUCT: The University's Student Code of Conduct (http://www.umb.edu/life_on_campus/policies/code , https://www.umb.edu/life_on_campus/policies/community/code) exists to maintain and protect an environment conducive to learning. It sets clear standards of respect for members of the University community and their property, as well as laying out the procedures for addressing unacceptable conduct. Students can expect faculty members and the Office of the Dean of Students to look after the welfare of the University community and, at the same time, to take an educational approach in which students violating the Code might learn from their mistakes and understand how their behavior affects others.

PLAGIARISM: Using another person's ideas or material you did not write without citing the source is plagiarism and is unacceptable (see library guide and Academic Honesty policies).

Students are advised to retain a copy of this syllabus in personal files for use when applying for certification, licensure, or transfer credit.

This syllabus is subject to change, but workload expectations will not be increased after the semester starts. (Version 24 Jan 18; changes after the start of the semester are marked in red)

III. Contract: What is expected overall

- For the different assignments and participation items take into account the guidelines supplied on the Notes wikipage as well as the general expectations conveyed in the rubric below.
- The research and writing part of the course leads to presentations and written assignments or "products" (which will average 800-1200 words) on 4 PBL cases. Participation requirements included active participation during class based on preparation between classes, meeting with the instructor on your assignments and projects, reading the assigned readings even though these won't be discussed in class, regularly adding (by posts to the blog) annotated references for an evolving bibliography and notes on your inquiries in progress. It is expected that you will spend at least 6.5 hours per session outside class time reading, researching, and writing.
- The draft products are commented on, but not graded. You are expected to read comments carefully, consult with instructor and peer commentator if you don't understand a comment, revise thoughtfully in response to the comments, and resubmit. Not grading assignment skeeps the focus on interaction around written work and presentations that emerge from participation in the unfolding dynamics of the course.
- You should aim for 10 of 12 writing/presentation assignments submitted by the due dates as well as 32 of 38 participation items fulfilled. (Allowing a fraction of assignments to be skipped without penalty or explanation accommodates the contingencies of your lives.) If this 10 & 32 level is reached—and the goal is to work with everyone to achieve that—you get at least a B+ and a rubric is used to determine B+, A- or A. If you don't get to that level, the grade is based on points given for what has been completed (as described below).
- The course works by building from one PBL unit to the next so late submissions detract significantly from the learning process for the student in question and from the learning possibilities for the other students. Each student can ask for extensions--no explanation needed--on two assignments or participation items, moving the due date as far back as the last session. Beyond the 2 extensions, submissions more than a week late don't count; instead, focus on doing the best you can with the remaining assignments and participation items.
- Use a personal copy of the checklist wikipage to keep a log of assignments and participation items completed. You keep track of due dates--do not expect class-time or meetings with the instructor to be taken up reminding you. Similarly, if you get behind, you take the initiative to submit a plan to catch up or reassure the instructors that you have, in light of your other commitments, chosen to take the grading consequences of missing assignments or due dates.
- The different assignments and participation items are listed below so as to be explicit about the course contract. Of course, you need more information to undertake these assignments and items. You should take into account the guidelines supplied on the Notes wikipage and the examples linked to your checklist wikipage, as well as the overall expectations conveyed in the rubric below.

Written products and presentations from PBL units (3/5 of grade)

A. Presentations for each PBL case to class and a panel of visitors (=4 assignments)

B. Draft product for each PBL case (800-1200 words, plus bibliography), due one day after the presentation by email to the instructor, who will also forward it to a peer for comments. (=4 assignments)

C. Product (800-1200 words, plus bibliography) resubmitted after further inquiry and serious revision in response to plus-delta comments on presentation and to comments from an instructor and a peer; due 2 weeks after presentation (=4 assignments)

Participation and contribution to the class process (2/5 of grade)

a. Building learning community through i) attendance and participation at class meetings based on reading and preparation between meetings, and ii) inquiry and reading on the CE between sessions, with posting of annotated bibliography items (see c. below) (=14 items).

b. Posting to blog of the "syllabus treasure hunt (quiz)" before session 2.

c. Bibliography contributions with paragraph-length annotations, drawn from readings assigned or ones you encounter during PBL units; 2 posted to blog for the PBL during each unit (=8 items)

d. Notes or other assignments on inquiries pursued since the previous session, twice during each unit, posted to blog (=8 items)

e. Peer commentary emailed to the student, with cc to instructor, on draft product from PBL unit within a week of presentation (=4 items)

f. Minimum of two in-office or phone conferences on your PBL inquiries -- one by session 5; the other by session 10 (=2 items)

g. Submission in last session of filled-in copy of assignment checklist, including planned dates for any further submissions or completion contract if needed, and student's self-assessment on rubric below.

h. EXTRA-Participation in a Science in a Changing World workshop as part of the Cambridge Science Festival, date tba.

[* Asynchronous online students: For A. send link to pre-recorded presentation before the session. Replace a. with a blog post check-in by the time of class and another post by the weekend consisting of reflections from 4 points spread across the recording of the class meeting, the assumption being that you will have done the activity for the class. Ditto for make-up. (If you can attend part of the class session, make a proportional number of posts across the recording of what you miss.)]

Overall course grade

If 10 of 12 writing and presentation assignments are submitted by the due date as well as 32 participation items fulfilled, you get at least a B+ and 80 points; the rubric below is then used at the end of the course to add points for final grade. Only if you do not reach the level of the automatic B+ or above, then for each original assignment, each resubmitted revision (*) and each presentation 5 points are given (minus 1 point for each week or part thereof late), and 1 point is given for each participation item, up to a maximum of 80. (* Superficial revisions don't count.)

Minimum points for letter grade: A 95, A- 90, B+ 80, B 72.5, B- 65, C+ 57.5, C 50.

Rubric: For each quality "fulfilled very well" you get 2 additional points. If you "did an OK job, but there was room for more development/attention," you get 1 point.

1. A sequence of assignments paced more or less as in syllabus (including timely revisions),

2. revised thoroughly and with new thinking in response to comments.

3. Projects innovative in addressing the specifications of each case, well planned and carried out with considerable initiative, and

4. indicate that you can extend tools and processes from the course to your specific situation so as to engage with "political influences on the development of science and technology, and, reciprocally, ...influences of such developments on political processes and possibilities."

5. Written assignments (products) clear and well structured so as to reach ("GOSP   ") a defined audience,

6. with supporting references and detail, and professionally presented.

Active, prepared participation and building class as learning community, including

7. notes or other assignments posted on inquiries in progress

8. prepared participation in class activities, incl. check-ins on readings and student-led activities for unit 4,

9. comments on other students' presentations and drafts, and

10. annotated bibliography entries and other contributions to learning from each other.

IV. Schedule of classes: What is expected each session and why -- how each session contributes to the unfolding of the course

1, 1/30, 2, 2/6, 3, 2/13, 4, 2/20, 5, 2/27, 6, 3/6, 7, 3/20, 8, 3/27, 9, 4/3, 10, 4/10, 11, 4/17, 12, 4/24, 13, 5/1, 14, 5/8

Session 1, Introductions to the learning community and to the Project-Based Learning format

Preparation:

Obtain required texts. Complete technical set up.

Online students: Join zoom at 3.30 to learn and practice procedures.

Face2face students: Bring laptop or tablet (if you have one) and activate connection to UMB wifi. (Ditto for sessions 2, 6, 8, 9, 14).

Session:

0. Online students join at 3.30 to practice using zoom, wiki, and blog.

1a. PBL and the rhythm of the course

1b. Very brief overview of the four cases that make up the course

1c. Carry over from one case to next, or beyond the course? —depends on experiences as well as tangible outcomes (image)

2. Autobiographical introductions   : 4-5 minutes each on the life and educational stories that bring us to (and that we bring into) a course on scientific and political change, with Connections & Extensions responses using this form

2b. Refreshment and exercise break

3. A 60-minute PBL to experience the typical three phases of a PBL unit:

Consider [this statement](#) of developments that have happened over the same period during which projections and scenarios for a climate change future have been refined.

> Brainstorm: What questions are raised for you by one or more of these statements--especially about the views of science and technology in relation to politics (and vice versa)? Inquiry: Use the internet to find out answers to at least some of the questions. Report: Share a quick summary of your inquiry on the [blog](#) .

4a. (Time permitting) First look at 4Rs (Taylor et al. 2011) and Probe-Connect-Create Change-Reflect [frameworks](#) for building a supportive community for learning.

4b. Walk through links needed for preparation for session 2 (listed below)

5. [Critical Incident Questionnaire](#) (submitted online at http://bit.ly/CIQ1e or on paper) [results to be posted [here](#)]

PBL UNIT 1 (=focus through session 4, with follow up through session 6)
in which we investigate who—at various levels of political organization and decision making—needs to know what kinds of things that different natural and social sciences have learned (or could learn if appropriate short- or long-term research were undertaken) concerning the science-policy connections involved in improving responses to extreme climatic events and how that knowledge can be shaped to influence those people.

Session 2, Case 1. Generating questions for inquiry in PBL and in Science & Technology Studies (STS)

Preparation:

Complete [syllabus treasure hunt](#) to acquaint yourself with, and raise questions about requirements, the wiki, the blog, the [PBL](#) approach, and the syllabus in general.

Review Connections and Extensions feedback from autobiographical intros (to be linked online [here](#))

Read [Case 1](#), "Science-policy connections to improve responses to extreme climatic events: Briefings requested-quickly!", including [what to do and when](#)

Identify and post [Knowledge claims and Questions](#) for inquiry = 1st participation item d for PBL Unit 1 (Optional: Begin inquiry into some of those Questions).

Reading: Either Taylor and Buttel or Glantz, 1-7 & 407-428. (Suitable for paragraph-length annotations under participation item c)

> (Readings are not discussed in class but are meant to inform your inquiry into the cases or your reflection afterwards.)

Session:

0. Join class at 3.30 to get or provide coaching on finding your way around course materials.

1. Feedback on Critical Incident Questionnaire, follow-up on syllabus treasure hunt (e.g., questions about requirements, the wiki, and the syllabus) including [note about PBL](#) , and Connections and Extensions.

2. Discussion (using the [5-phase format](#)) about getting oriented to the PBL approach in general and the case in particular, including findings or questions arising from any inquiry made since session 1.

3. Mini-lecture on "[KAQ](#) " (Knowledge claims-Actions that follow-Question for inquiry) framework for

teasing out diverse inquiries and its relation to a pragmatic perspective in the field of Science & Technology Studies (STS).

4. Workshop on generating questions, inquiring into them, and preparing a work-in-progress presentation on the briefings required by case 1.

Session 3, Case 1, Work-in-progress presentations to move inquiries forward

Preparation:

Pursue inquiries for PBL1; see what to do and when

Prepare work-in-progress presentation = 2nd participation item d for PBL Unit 1

Post 1st Bibliography contribution with paragraph-length annotation (if you haven't already) = participation item c

Reading: Sismondo, "STS and an Engaged Program"

Session:

1. Work-in-progress presentations (10 minutes total, which includes time for questions and plus-delta feedback   using form)

2. Discussion (5-phase format) about the ways we can meet the national policy analysis group's "interest in making an informed and informative contribution to public discussion."

Session 4, Case 1 (completed). Presentation of briefings to members of the "National policy analysis group"

Preparation:

Continue inquiry for PBL1; see what to do and when

Prepare presentation on briefing (based on feedback on session 3 presentation & continued inquiry)

Post 2nd Bibliography contribution with paragraph-length annotation (if you haven't already = participation item c) [this expectation won't be listed in future sessions]

Reading: Yearley (from 2008 STS Handbook, up to p. 930).

Session:

1. Presentation on briefing for the panel, using a draft of the briefing (due tomorrow) if ready and if helpful

2. Discussion (5-phase format) about presentations, time permitting.

PBL UNIT 2 (=focus through session 7, with follow up through session 9)

A PBL unit in which we consider the rise and fall of grassroots or citizen initiatives in shaping the directions taken in science and technology and draw attention to their effects.

Session 5, History of U.S. science policy/politics: Mapping of intersecting processes

Preparation:

Read Case 2, taking note of the what to do and when

Follow the directions in the case to map of one chapter of Dickson's New Politics of Science or one chapter of Moore's Disrupting Science or Hess et al. "Science, Technology, and Social Movements," in Hackett et al., or Moore, "Powered by the People," in Frickel and Moore

Prepare, scan and post map = 1st participation item d for PBL Unit 2

Reading = Clarke (2005, chapter 3) in addition to the chapter you choose to map.

Peer commentary on draft briefings (from case 1)

Session:

1. Presentation of maps, preceded and followed by discussion ([5-phase format](#))

Session 6, Rise and decline, hopes and outcomes of various citizen-level science and politics initiatives

Preparation:

Ongoing inquiry into Case 2 (see [what to do and when](#), including posting of note on inquiries = 2nd participation item d for PBL Unit 2)

Prepare to bring one example of a citizen-level science and politics initiative into session 6 discussion.

Reading: Moore (2006)

Post revised briefing to the blog with copy to instructor, taking account of instructor and peer feedback

Session:

1. Describe examples of citizen-level science and politics initiatives

2. Discussion ([5-phase format](#)) about how Moore (2006) illuminates examples of citizen-level science and politics initiatives.

3. Workshop on trail guides

Session 7, Case 2 (completed). Presentation of trail guides to guests

Preparation:

Continue inquiry into Case 2 (see [what to do and when](#))

Prepare trails guides and presentation

Reading: Epstein or Hess et al. (from STS Handbook, 2008 edition)

Session:

1. Presentations, with guest audience and [Plus-delta feedback](#)   on each presentation

2. Discussion ([5-phase format](#)) about presentations, time permitting.

3. [Critical incident questionnaire](#) , to take stock of the case and the course at mid-semester.

PBL UNIT 3 (=focus through session 10, with follow up through session 12)

Develop a research prospectus for collaboration with Europeans on comparative studies of infrastructure development around new genetic technologies

Session 8, Comparisons: within Europe; within the U.S.A.; between them

Preparation:

Read [Case 3](#) and begin the [steps](#) for this PBL, including:

> • Identify one or a few cases in the ITEMS book that capture your interest, make notes about how the research was framed and organized; and

• Prepare to describe in class the case or situation around the use of new genetic technologies that you have identified to work on

Review collated responses from Critical incident questionnaire (to be posted online here)

Reading: Panofsky (2011) or Tabor and Lappé

Peer commentary on draft trail guides

Session:

1. Discussion about situations found for comparisons within and between regions.

2. Workshop on moving ahead on steps towards the prospectus.

Session 9, Discussion about infrastructure development around new genetic technologies.

Preparation:

Ongoing inquiry into Case 3--see what to do and when , including:

• Prepare to describe in class what you have learned with respect to a) comparisons within and between regions and b) infrastructure that is or could be developed around your case or situation.

Reading: Edwards

Post revised trail guide to the blog with copy to instructor, taking account of instructor and peer feedback

Session:

1. Discussion of examples of contrasting infrastructure policies.

2. Workshop on moving ahead on steps towards the prospectus.

3. Mini-lecture (building on Taylor 2009) visual aids

Session 10, Case 3 (completed). Presentation of research prospectus to panel of Europeans

Preparation:

Continue inquiry into Case 3 see (what to do and when)

Prepare research prospectus and presentation.

Reading: Taylor (2009)

Session:

1. Presentation on research prospectus to panel and Plus-delta feedback   on each presentation

2. Discussion (5-phase format   ) about presentations, time permitting.

PBL UNIT 4 (=focus through session 13, with follow up through one week after session 14)

Develop teaching units or public engagement activities that prepare students and citizens to be informed participants in political debates about science, technology, and social change

Session 11, Prepare and perhaps Practice "Education & civic engagement" units/activities

Preparation:

Read Case 4, then begin work on that case, taking note of expectations for posting two annotated bibliography entries to the blog and notes on inquiries twice during the PBL.

For CCT students these units/activities should be suitable for inclusion in the required Reflective Practitioner's Portfolio because the description of your unit or activities includes a reflection at the

end that conveys the ways in which the unit or activity demonstrates your attention to the [three broad goals](#) of the course.

Prepare as requested by presenters to participate in their activities for this session.

Reading: Taylor (2014), http://youtu.be/KD_jtpmarfE

Peer commentary on draft of research prospectus

1. In-session practice of "Education & civic engagement" units/activities, if anyone has volunteered for this session.

3. [Rapid PBL](#)   to stimulate thinking about how to prepare "Education & civic engagement" units/activities

~~**Extra participation option, date TBA, 7-9pm**~~

~~Participation in a Science in a Changing World dialogue hours as part of the Cambridge Science Festival (Participation item h:~~ ~~[details](#)~~   ~~)~~

> ~~Two dialogues starting at 7pm and 8pm~~

Session 12, Practice "Education & civic engagement" units/activities

Preparation:

Continue work on [Case 4](#)

> (Once you have done your in-session practice, then take note of feedback and continue your inquiry into how to run an effective activity)

Prepare as requested by presenters to participate in their activities for this session.

Reading: Coe

Post revised Case 3 prospectus to the blog with copy to instructor, taking account of instructor and peer feedback

Session:

1. In-session practice of "Education & civic engagement" units/activities
2. Closing circle reflection

Session 13, Practice "Education & civic engagement" units/activities

Preparation:

Continue work on [Case 4](#)

> (Once you have done your in-session practice, then take note of feedback and continue your inquiry into how to run an effective activity)

Prepare as requested by presenters to participate in their activities for this session.

Reading: Taylor et al. (2011)

Prepare draft report on "Education & civic engagement" unit/activity for submission by day after the session

Session:

1. In-session practice of "Education & civic engagement" units/activities
2. Closing circle reflection

Session 14, Taking stock of course: Where have we come & where do we go from here?

Peer commentary on draft reports of "Education & civic engagement" units/activities

Assignment checklist completed

Last week for any extensions and for posts for participation items c & d

Reading: Taylor (2016)

Session:

1. Retrospective look at initial Connections and Extensions   for the class as learning community. (instructions)

2. Five-phase dialogue, ending with Closing Circle (instructions)

3. Official evaluation that starts with a self-evaluation (to be administered by google form) (which follows this model   ).

One week after session 14: Post revised unit/activity to the blog with copy to instructor, taking account of instructor and peer feedback

V. Bibliography

Use the instructor-supplied password on this portal to access the readings (unless it is linked below). The list below includes references cited in the PBL cases, which are not necessarily the most recent or most comprehensive publications on the topics. Further readings will emerge during student inquiry on the cases and be shared on the posts to the relevant wikipage.

Boal, I. (2009). "Climate, Globe, Capital: The Science and Politics of the Abyss." Scurvy Tunes   .

Centro de Estudos Sociais (2005) Identifying Trends in European Medical Space: Contribution of European Social and Human Sciences. Coimbra, Portugal: Centro de Estudos Sociais.

Clarke, A. (2005). Situational Analysis: Grounded Theory after the Postmodern Turn. Thousand Oaks, CA: Sage

Coe, J. (2005). " What is the ideal consensus conference, and how would we recognize it if we saw one?" Working Papers on Science in a Changing World. 9.
https://scholarworks.umb.edu/cct_sicw/9

Dickson, D. (1984). The New Politics of Science. New York, Pantheon, reprinted University of Chicago Press, 1988.

Edwards, P. N. (2003). "Infrastructure and modernity: Force, time, and social organization in the history of sociotechnical systems." Modernity and Technology. T. J. Misa, P. Brey and A. Feenberg. Cambridge, MA, MIT Press: 185-225.

Epstein, S. (2008). "Patient groups and health movements." The Handbook of Science and Technology Studies. E. Hackett, O. Amsterdamska, M. Lynch and J. Wajcman. Cambridge, MA, MIT Press: 499-540.

Felt, U., R. Fouché, C. Miller and L. Smith-Doerr, Eds. (2017). _The Handbook of Science and Technology Studies_. Cambridge, MA, MIT Press.

Frickel, S. and K. Moore (eds.) (2006). The new political sociology of science: institutions, networks, and power. Madison, WI, University of Madison, Wisconsin. (Available online via Ebrary   )

Glantz, M. (1989) in Glantz, M. ed. (1989). Societal Responses to Regional Climate Change: Forecasting by Analogy. Boulder, CO: Westview Press, 1-7 & 407-428.

Hackett, E., O. Amsterdamska, et al., Eds. (2008). The Handbook of Science and Technology Studies. Cambridge, MA, MIT Press.

Hess, D., S. Breyman, et al. (2008). "Science, Technology, and Social Movements." The Handbook of Science and Technology Studies. E. Hackett, O. Amsterdamska, M. Lynch and J. Wajcman (eds.) Cambridge, MA, MIT Press: 473-498.

Leopold, L. (2007). The Man Who Hated Work and Loved Labor: The Life and Times of Tony Mazzocchi. White River Junction, VT, Chelsea Green Publishing.

Moore, K. (2006). "Powered By the People: Scientific Authority in Participatory Science." The New Political Sociology of Science: Organizations, Networks, and Institutions. S. Frickel and K. Moore (eds.) Madison, WI, University of Wisconsin Press: 299-323.

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(See also 2005 syllabus and supplementary bibliography)