

Creating Science & Technology Policy from the Grassroots Up

Class Times: MW 1:00pm to 2:15pm

Location: TBD

URL: <http://techpolicy.pbwiki.com>

Instructor: Felicia M. Sullivan

Email: felicia.sullivan@umb.edu

Office Hours: Monday 10:00am-12:00pm
Wednesday 2:30pm – 4:30pm
or by appointment

Description:

Science and technology policy is often created through expert knowledge networks that often lack an informed perspective from average citizens. Marginalized communities such as those living in poverty, youth, and immigrants lack the networks of knowledge and power that can influence policy making processes. Expertise networks in science and technology also suffer from gender and racial imbalances, meaning that significant input from these groups are not adequately incorporated into key decisions.

The problem is compounded by research which informs expert knowledge. Such research suffers from weak, unequal or non-existent ties to communities being “researched.” Participatory research environments that allow greater grassroots input into shaping and defining research agendas do exist. However, these efforts are still few and far between. Tensions between the academy and community-based interests remain a significant barrier to creating meaningful research that can adequately inform policy in the realm of science and technology. The field work of the class will be supported by a teaching assistant who has extensive experience working with community-based organizations and will work with students in their work with the community.

This course will ask students¹ to critically examine and analyze how science and technology knowledge is produced. Drawing from the field of science and technology studies, students will explore the social and institutional conditions of knowledge creation. Students will also be asked to re-envision how communities, especially the historically marginalized, might create or inform the creation of a different set of knowledge systems. The learning environment will be enriched by teaming practitioners and junior researchers. These teams will identify key science and / or technology issues in the community that would benefit from additional research. Each team will construct a case for fellow classmates to explore through a problem-based learning approach. Teams will then take the insights from the class, combine them with additional research and craft a policy statement designed to gain support from legislators and community members.

Objectives:

- To understand the core arguments and critiques of STS with an eye towards marginalized voices
- To probe key science and technology issues from a community perspective
- To create cases based on real-life community issues
- To use problem-based learning techniques to expand knowledge and create action
- To explore mechanisms for creating strong policy arguments
- To reflect on the tensions and benefits in crossing academic and activist boundaries

¹ It should be noted that this course will integrate 10 students from the undergraduate student body as well as 10 members of the community fellows program. Community fellows are engaged practitioners who have been accepted to a year long program of formal course work as well as critical reflection geared towards deepening and informing their work in the community.

Assignments:

Evaluation in this class will be on a pass / fail basis. Each student will submit the following items as part of a course “portfolio”:

Individual	Team
Mid-term Essays on STS KAQ on one Community STS Case Weekly Personal Reflections Active Participation Evaluation by other Team Members	Team WIKI Community STS Case Community STS Case Presentation Policy Statement

Mid-term Essays on STS

Students will choose 2 of 4 questions that seek to explore the key concepts covered in the STS section. Each essay should be approximately 750 words and look to critically analyze and synthesize core concepts.

KAQ on one Community STS Case

You will provide a KAQ on the Community STS case from a team other than your own. The process of conducting a KAQ will be demonstrated during class.

Weekly Personal Reflections

Students will keep a journal (either print or electronic) which reflects upon theories explored, practical applications used, team interactions, work with community partners, possible relevance to student interests and any other insights gained from the course. Students will share these with the instructor and teaching assistant twice during the semester.

Active Participation

Students are expected to engage in class discussion, participate fully in team projects and work with community partners in a thoughtful and professional manner.

Evaluation by other Team Members

You will evaluate the dynamics of the team you are working with as well as the roles and responsibilities of yourself and others on the team. Your teammates will do the same, including an evaluation of your performance.

Team Wiki

Each team will maintain a team set of wiki pages that will include notes from team meetings, “team to dos,” team work documents, and other materials relevant to group collaboration. Members will be expected to share their team wikis with other teams, the instructor and teaching assistant. Team wikis should be updated on a weekly basis.

Community STS Case & Presentation

Based on conversations and input from community partners, each team will create a team case designed to explore possible directions for action with your community partner. This case will be shared with the rest of the class. Another team will then use the KAQ method to unearth additional questions, confirm knowledge claims, and envision actions to add to your team's thinking about your case. Your team will be expected to present your case to the class as part of this process.

Policy Statement

Based on the feedback to your community case, each team will create a policy statement intended to share with decision makers.

Outline:

GETTING ORIENTED

Week 1: Overview and Positioning Ourselves

Theory

Where are we coming from?
Syllabus / Assignments / Evaluation
Assign community partners

Practice

Team meetings²
Set up team wikis
Pick community partner

Required Reading:

Dick, B (2002). "Action Research: Action and Research" A paper prepared for the seminar "Doing good action research" held at Southern Cross University, Monday February 18, 2002. Accessed on April 15, 2009 at <http://www.scu.edu.au/schools/gcm/ar/arp/aandr.html> (Additional resources here - <http://www.scu.edu.au/schools/gcm/ar/arhome.html>)

McNeal, A. (n.d.) How to Read a Scientific Research Paper--a four-step guide for students and for faculty. Retrieved on August 23, 2007 from http://helios.hampshire.edu/~apmNS/design/RESOURCES/HOW_READ.html

DUE Week 2: make initial contact with community partner and assess time for team to meet with partner within the next two weeks.

QUESTIONING SCIENCE AND TECHNOLOGY KNOWLEDGE

Week 2: Introducing Critical Approaches to Science and Technology

Theory

Class discussion³ grounded in readings
Case #1
Introducing KAQ method

Practice

Team meetings
Preparing for initial community partner meetings
Relate partner work to this week's case

Required Reading:

Case #1: Donna Haraway Read National Geographic

Hess, DJ (1995). "Introduction" and "The Cultural Construction of Science and Technology," in *Science and Technology in a Multicultural World: The Cultural Politics of Facts and Artifacts* New York, NY: Columbia University Press: 1-53.

Martin, B (1993). "The Critique of Science Becomes Academic." Published in *Science, Technology, &*

² Team work will be guided the small group work model detailed here - <http://cct.wikispaces.com/SmallGroupWork>

³ Class discussions will attempt to use the JigSaw Discussion model detailed here - <http://cct.wikispaces.com/JigSawDiscussion>

Human Values, 18(2):247-259. - Accessed on February 22, 2009 at :
<http://www.uow.edu.au/arts/sts/bmartin/pubs/93sthv.html>

Rose, H (1994). "Is a Feminist Science Possible?," in *Love, Power and Knowledge: Towards a Feminist Transformation of the Science*. Bloomington, IN: Indiana University Press: 1-27.

Week 3: The Impact of Institutions on Science and Technology

Theory

Class discussion grounded in readings and using Case #2
Strengthening use of KAQ

Practice

Team meeting
Final prep for initial community partner meetings
Relate partner work to this week's case

Required Reading:

Case #2: Personal Genomics

Croissant, JL and Smith-Doerr, L (2008). "Organizational Contexts of Science: Boundaries and Relationship between University and Industry," in *The Handbook of Science and Technology Studies (3rd Edition)*, EJ Hackett, O Amsterdamska, M Lynch, and J Wajcman (Eds). Cambridge, MA: MIT Press: 691-718.

Hess, DJ (1995). "Social Relations and Structures of Scientific and Technical Communities," in *Science and Technology in a Multicultural World: The Cultural Politics of Facts and Artifacts* New York, NY: Columbia University Press: 117-160.

DUE Week 4: 1st meeting with community partner completed

Week 4: Marginalized Voices in Science and Technology: Focus on Race and Gender

Theory

Class discussion grounded in readings and using Case #3
Mastering KAQ

Practice

Team meetings
Focussing in on community partner issue
Relate partner work to this week's case
Schedule workshop with community partner

Required Reading:

Case #3: Something the Lord Made (Film about the life of Vivien Thomas)

Canadian Council on Learning (2007). "Lessons in Learning: The cultural divide in science education for Aboriginal learners." Accessed on April 23, 2009 at: http://www.ccl-cca.ca/CCL/Reports/LessonsInLearning/LinL20070116_Ab_sci_edu.htm.

Keller, EF (2001). "Making a Difference: Feminist Movement and Feminist Critiques of Science," in

Feminism in the Twentieth-Century: Science, Technology and Medicine, Creager, ANH, Lunbeck, E & Schiebinger, L (eds.). Chicago, IL: University of Chicago Press: 98-127.

Rossiter, M (1995). "Introductions" in *Women Scientists in America: Before Affirmative Action 1940-1972*. Baltimore, MD: Johns Hopkins University Press: xv – xviii.

Washington, H (2006). *Medical Apartheid*. New York: Harlem Moon.

Week 5: Working Towards Alternative Knowledge Systems in Science and Technology

Theory

Class discussion grounded in readings and using Case #4
Mastering KAQ

Practice

Team meetings
Focussing in on community partner issue
Relate partner work to this week's case
Schedule workshop with community partner

Required Reading:

Case #4: Alternative Medicines: Homeopathy, Chiropractic, and Acupuncture

Hess, DJ (1995). "Other Ways of Knowing and Doing: The Ethnoknowledges and Non-Western Medicine" and "Cosmopolitan Technologies, Native Peoples and Resistance Struggles," in *Science and Technology in a Multicultural World: The Cultural Politics of Facts and Artifacts*. New York, NY: Columbia University Press: 185-249.

DUE Week 6: Essays on STS

FOCUSING IN ON COMMUNITY ISSUES

Week 6: Building An Issue Case Informed by the Community

Theory

Modeling a Community Vision and Theory of Change workshop

Practice

Team Meetings
Preparation for community partner workshops

Required Reading:

Anderson, AA (2008). *The Community Builder's Approach to Theory of Change: A Practical Guide to Theory Development*. New York, NY: The Aspen Institute Roundtable on Community Change. <http://www.aspeninstitute.org/atf/cf/%7BDEB6F227-659B-4EC8-8F84-8DF23CA704F5%7D/rcccommbuildersapproach.pdf>

Boston Action Tank (2008). *Theory of Change: Mapping Strategies for Long-term Goals*. Boston, MA: Organizers Collaborative. Accessed on April 16, 2009 at <http://www.organizerscollaborative.org/files/Theory%20of%20Change-handout.pdf>

Week 7: Gaining Insights from the Community

Practice

NO CLASS – Conduct community workshops

Practice

NO CLASS – Conduct community workshops

DUE Week 8: Completed community workshops

DUE Week 8: Journal / Personal Reflection Check-in (schedule one-on-one meeting)

Week 8: Community Voices in the Classroom

Reflecion

Community workshops debriefs⁴
What did we learn about issues?
What did we learn about the process?
How might we create our own cases based on this?

Practice

Team meetings
Work on cases
Prepare for case presentation

Week 9: Creating a Community Problem Case

Theory

Class discussion
Additional discussion about cases
Exploring the components of a case

Practice

Team meetings
Work on cases
Prepare for case presentation

Required Reading:

SGS (2009). “Problem-based learning,” *Study Guides and Strategies*. Accessed on April 23, 2009 at: <http://www.studygs.net/pbl.htm>

Exploring the Environment (2005). “Teacher Pages: Problem-based learning.” Accessed on April 23, 2009 at: <http://www.cotf.edu/ete/teacher/teacherout.html>

DUE Week 10: Team cases & presentations

Week 10: Presenting Team Cases

Presentations

Case Presentations - Groups 1 & 2

Presentations

Case Presentations – Groups 3 & 4

⁴ Will attempt to use the Focused Conversation model detailed here: <http://cct.wikispaces.com/FocusedConversation>

DUE Week 11: KAQ for assigned case

DUE Week 11: Journal / Personal Reflection Check-in (schedule one-on-one meetings)

THE POLICY PROCESS

Week 11: Turning Community Issues into Policy Statements

Theory

Lecture on the policy process
Class discussion

Practice

Team Meetings
Turning cases into policy statements

Required Reading:

Community Toolbox (2009). "Troubleshooting Guide for Solving Problems: Common Problems, Reflection Questions, and Links to Support Tools." Accessed on April 4, 2009 at:
<http://ctb.ku.edu/en/solveproblem/>

Community Toolbox (2009). "Making Community Presentations." Accessed on April 4, 2009 at:
http://ctb.ku.edu/en/tablecontents/sub_section_main_1029.htm

Education Commission of the States (2004). A Newcomer's Guide to the Policy Process. Accessed on April 4, 2009 at: www.communitycollegepolicy.org/html/toolkit/downloads/policy_primer.pdf

DUE Week 12: Team Policy Statement

DUE Week 12: Team Evaluation

Week 12: Looking Forward, Looking Backward

Visioning	Reflecting
What do the various community issues tell us? What would be possible next steps? What additional work needs to be done?	What have we learned? What were the challenges? How did working with cases, community, teams go?