



Changing Life:

Reading the Intersections of Gender, Race, Biology, and Literature

Spring 2017

Consortium for Graduate Studies in Gender, Culture, Women, and Sexuality

In this course students will develop their abilities to expose ways that scientific knowledge has been shaped in contexts that are gendered, racialized, economically exploitative, and hetero-normative. This happens through a sequence of four projects that concern:

1. interpretation of the cultural dimensions of science;
2. climate change futures;
3. genomic citizenry; and
4. students' plans for ongoing practice.

The projects also draw students' attention to areas such as museum displays, science fiction, and internet-mediated discourse, and involve close reading and literary analysis of texts—whether in science, social studies of science, or science fiction.

The course uses a Project-Based Learning format that allows students to shape their own directions of inquiry in each project, development of skills, and collegial support. Students' learning will be guided by individualized bibliographies co-constructed with the instructors, the inquiries of the other students, and a set of tools and processes for literary analysis, inquiry, reflection, and support. By the end of the class, students will have

- 1) generated products for each of the projects and so charted a path into an ever-growing body of work on the interpretation of sciences in contexts, to which feminist, anti-racist, and other critical analysts and activists have made significant contributions;
- 2) formulated a personal plan for ongoing inquiry that troubles the boundaries of knowledge production in the academy and sciences, especially as they concern race and gender.

Students from all fields and levels of preparation are encouraged to join the course; advanced study in the sciences or in literary analysis is not required.

Table of Contents to Course Booklet

I. Quick access to key information, page 2

Including links to

- II. Course description and other Information to get started, orient yourself at the start of the course, and refer back to from time to time, page 3.
- III. Contract: Course requirements and assessment, page 7.
- IV. Schedule of classes (This section starts with links to specific classes), page 10.
- V. Bibliography (with links to pdfs), page 20.
- VI. Notes on class routines and assignments, page 23.

Instructors	<p>Mary Baine Campbell, English, Comparative Literature, Women & Gender Studies, Brandeis University, campbell@brandeis.edu Office hours MIT (place TBA): Weds 3-4:15 and 8:15-9; at Brandeis Tues 2-3 and Fri 10:30-11:30</p> <p>Peter Taylor, UMass Boston Programs in Critical & Creative Thinking Program, Public Policy, and Science in a Changing World, peter.taylor@umb.edu, Office hours before class, place MIT Stata Center groundfloor cafe, by signup: http://ptaylor.wikispaces.umb.edu/PTOfficeHours</p>
Class time & location	<p>Weds 5-8pm, Feb 1 – May 10, MIT, Bldg 56, Room 154 (exc. 4-265 on 2/1)</p> <ul style="list-style-type: none">▪ Spring break varies among campuses so access-from-a-distance to certain classes will be possible. Arrangements may be made for snow day meetings on google hangout (set-up instructions: http://bit.ly/HangoutInfo)
Glitches	<p>Report glitches in online materials using this form (http://bit.ly/692glitches)</p>
Blog/ Website	<p>https://gcws17.wordpress.com —BOOKMARK THIS LINK, where you can:</p> <ul style="list-style-type: none">▪ Access this course booklet and links to key pages, including class-by-class instructions, PBL projects, readings, instruction on assignments and participation items, and examples of work produced by previous students.▪ Post reflections on the course process, annotated bibliography entries, visual aids for presentations, draft and revised products from projects, peer comments, and whatever else seems appropriate to share.▪ Access Bibliographies, Evaluations and other materials that may be from past offerings of a related course.

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

Overview (and elaboration of course description)

We are familiar with the existence of art criticism and literary criticism, but, despite the importance of science and technology in today's society, "science criticism" is not a widely accepted enterprise. With the goal of promoting a wider range of engagements in science and technology, this course uses a Project-Based Learning (PBL) format to stimulate interdisciplinary inquiry, pedagogical, conceptual and practical innovation, and epistemological self-consciousness. The projects, described in boxes in the class schedule (Section IV), are designed to put into play a range of different kinds of resources, which include:

- the diverse interests, skills, commitments, and passions of the instructors and the students;
- annotated bibliographies, syllabi, and review essays—especially material contributed by feminist, anti-racist, and other critical analysts of science and technology;
- the rich personal and intellectual connections made easier in this internet age;
- the instructors' experience in stretching students and themselves beyond disciplinary and conceptual boundaries, especially as they concern race and gender; and
- various course routines (outlined in section VI) with related tools and processes.

PBL is an approach that allows you to shape your own directions of inquiry and develop your skills as investigators and prospective teachers. At the same time, the PBL projects engage your critical faculties as you learn to contextualize science, especially as they address or suppress gender and racial difference, and especially as can be discerned by reading and analysis of texts—whether in science, social studies of science, or science fiction. The projects address different areas of life and environmental sciences, but are sequenced so as to first lead you into practice with the interpretation of the cultural dimensions of science. Building on that, we contrast the imaginaries of fiction writers with those of scientists and science-emphasizing commentators, and then address the complexity of promises, fears, and claims being made about genetics in this evolving digital era. In the final course project, you develop a personal plan to foster the development of others in their learning about the issues raised in this course, and to practice some of what you plan. This is an opportunity to develop your own projects for teaching, prepare grant proposals for further inquiry or activist engagement, or construct syllabi around topics in feminist and critical studies of science and technology.

Throughout the semester we navigate between two tendencies. On one side, there will be **divergent, reticulating explorations** of the implications that each of you draw from the project descriptions. On the other side, you will have to **discipline these explorations** so as to generate the final product specified in

each project description. In that navigation, you address the bodies of substantive knowledge most relevant to your individual inquiries (guided by review essays in anthologies/handbooks, original scientific literature and informants identified by the instructors) and translate that knowledge into terms digestible by others with different levels of expertise around diverse (sometimes divergent) bodies of knowledge. You also navigate between generating a **product** for each project and practicing **processes** of close reading, reflection, dialogue, and articulation of identities. These different aspects of the course experience are animated by the challenging question of how each of us prepares for ongoing inquiry that troubles the boundaries of knowledge production in the academy and sciences. This last question is an obvious one for interdisciplinary work, but it also applies in any area of specialization that wants to stay relevant as the wider social context changes over time.

The PBL format of the course provides an opportunity to re-engage with yourself as an **avid learner and inquirer**. What makes this re-engagement possible is a combination of:

- the **tools and processes** used during the course for close reading of texts, inquiry, dialogue, reflection, and collaboration;
- the **connections** you make among the diverse participants who bring diverse interests, skills, knowledge, experience, and aspirations to the course; and
- our **contributions to the topics** laid out in the scenarios from which each project-based learning project begins.

Reflection on this re-engagement feeds into the final project, in which you plan for your own ongoing learning that enables you to “trouble the boundaries of knowledge production in the academy and sciences, especially as they concern race and gender.”

The PBL approach taken in this course makes the schedule of classes look incomplete—it doesn’t meet conventional expectations of weekly topics, readings, and pre-defined assignments. Browsing the links on the blog will give some feel for what might lie ahead, and students can view evaluations and other materials from a previous PBL science-related course for GCWS (<http://grst.wikispaces.umb.edu/Evaluations>). But the essence of the course is that we make the road as we travel. Expect this offering—this workshop-style collaboration of students—to result in a unique construction.

This said, there is a definite set of routines that make up the class sessions and other learning interactions in the course—blog, check-in, one shared focal reading per week, workshop, presentations, annotations, dialogue around written work, peer commentary, private learning journal (for details, see Notes on class routines and assignments [section VI]).

Instructors

Mary Baine Campbell, in English, Comparative Literature and Women's and Gender Studies at Brandeis University, brings to the course experience designing two team-taught seminars for GCWS, as well as long-term scholarly engagement with the literary and colonial pre-history of the modern sciences, social and "natural," and experience teaching graduate seminars aimed at analysis and critique of knowledge and the texts that encode it. I have a long-standing interest in climate change and ecology, and share the interest of most feminists in the imaginary of the body. In graduate courses I aim to help students become self-aware skeptics of the authoritative narratives that our graduate education itself inclines us to honor rather than question. The narratives of the biological sciences have been perhaps the most authoritative in our society for decades.

Peter Taylor, Professor and Director of the Science in a Changing World graduate track, University of Massachusetts Boston, brings to this course a) the experience of teaching a PBL-format GCWS course on gender, race, and science four times with 3 quite different co-instructors; b) openness to learning from the literary interpretive expertise of his co-instructor; and c) a desire to bring front and center the challenge for students of developing a narrative or plan for themselves as inquirers who trouble the boundaries of knowledge production in the academy and sciences and cultivate the support needed to continue to do so.

Key Texts

Recommended as reference work on different topics in the social studies of science and technology:

Gross, A. G. (2006), *Starring the Text: The Place of Rhetoric in Science Studies* Carbondale: Southern Illinois University Press.

Hiltner, K. (2015), *Ecocriticism: The Essential Reader*. NY: Routledge.

Hackett, E., Amsterdamska, O., et al. (ed.), 2008, *The Handbook of Science and Technology Studies*, Cambridge, MA: MIT Press—or 2017 edition if it appears in time. (If your library has it available on ebrary, there's no need to get a printed copy.)

Wyer, M, M. Barbercheck et al. (2014), ed., *Women, Science and Technology*, 3rd ed. NY: Routledge.

Recommended as a source for the process side of the course:

Taylor, P., J. Szteiter (2012) *Taking Yourself Seriously: Processes of Research and Engagement*. Arlington, MA: The Pumping Station (pdf from <http://thepumpingstation.org/books> or as paperback from other online booksellers).

ACCOMMODATIONS: Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. The student must

present any adaptation recommendations to the professors within a reasonable period, preferably by the end of the Drop/Add period.

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

This course booklet is subject to change, but workload expectations will not be increased after the semester starts. (Version 26 Jan 17)

III. Contract: Course requirements and assessment

Requirements

It is expected that you will spend several hours per week outside class time reading, researching, reflecting, and writing. The course works by building from one project to the next so being unprepared or submitting late detract significantly from the learning possible in class sessions. You keep track of your submissions and revisions on your own copy of a checklist of the presentations, written assignments, and participation items.

An unconventional assessment system complements the innovative pedagogy. It is designed to keep the focus on interaction around written work and participation in the unfolding dynamics of the course. The initial submission of a written product from each project is commented on by one instructor, but not graded. In response to comments received from your peers and instructors on your presentation for the project and initial submission, you undertake further inquiry, revise thoughtfully, and resubmit. The product is recorded as completed provided it is evident that you have undertaken further inquiry and rethinking to address comments. For course participation you undertake a variety of items (listed below).

Written assignments and presentations (3/5 of grade): For each PBL project, one presentation, one initial submission of the product requested in the scenario (at least 800 words), and one product revised in response to comments. (Additional details are provided with each PBL project [see boxes in schedule; Section IV] and in the Notes on assignments.)

Participation and contribution to the class process (2/5 of grade): Additional details are provided in the Notes on assignments.

- a. Attendance and Participation in class meetings based on preparation between classes, including focal reading (14 items)
- b. "Treasure Hunt", to get familiar with organization of course materials and requirements in the booklet and online (1 item)
- c. Annotated reference or resource (such as a person, organization, website) added at regular intervals to the evolving bibliography on the blog (8 items)
- d. Reflection on your experience of the course process and your learning in the PBL format (at least 10 weekly entries, each worth ½ an item, adding up to maximum of 5 items)
- e. Minimum of two in-person or phone conferences on your assignments and projects—one before class 5, the other, with the other instructor before class 10 (2 items)
- f. Exercises to prepare for class workshops (for classes 2, 8 & TBA; 4 items)
- g. Peer commentary on other students' draft products (3 times, by the class after presentations; 3 items)

h. Your assignment Checklist filled-in during the semester and submitted with your self-assessment on the rubric below; due at the last class (1 item).

Bonus item: Participate in April session at the Cambridge Science Festival, date, time, place TBA.

Grading

In recognition of the contingencies of your lives, around 20% of written assignments, presentations, and participation items may be skipped without penalty. Specifically, if you complete 3 of the 4 products and 30 of the 38 participation items, you get an automatic B+ and the Grading Rubric (see below) is used to assign B+, A- or A. *Only if you miss that target*—we hope you don't—are points tallied: You get 10 points for each completed product (or 5 points if you only make an initial submission), and you get 5 points for each presentation made, up to 50 points maximum. You get 1 point each participation item completed up to 35 maximum. These points are converted to letter grade:

B+ \geq 80

B \geq 72.5

B- \geq 65

C+ \geq 57.5

C \geq 50

F < 50 points.

If you qualify for an automatic B+, you get 80 points. In that case, the following rubric is used to add points (likely moving the grade above a B+). The total points are converted to letter grade:

A \geq 95

A- \geq 90

B+ \geq 80

Grading Rubric (for grades of B+ or above)

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. If “to be honest, this was not fulfilled,” you get 0 points.

1. Written submissions are paced as specified in the schedule, including timely revisions.
2. Initial submission of each project's product are revised thoroughly, showing further inquiry and new thinking in response to comments.
3. Work on projects is innovative and well planned with respect to generating the required product in the time available.
4. Work on projects indicate that you can extend tools and processes from the course to your specific situation so as to “trouble... the boundaries of knowledge production in the academy and sciences.”

5. Written submissions are clear, well structured, and address the specification of the products given in the Project descriptions.
6. Written submissions have supporting references and detail, and are professionally presented.
7. Participation in classes is active and shows preparation, as evident in exercises to prepare for class workshops and discussion of the shared focal reading.
8. Involvement in building the class as a learning community is active, as evident in participation in student-student activities and helpful peer comments on drafts and presentations.
9. Reflections on the course process and your learning in the PBL format, as recorded in your private learning journal, is thoughtful.
10. Contributions to the evolving bibliography are well annotated.

IV. Schedule of classes

- 2/1, 2/8, 2/15, 2/22, 3/1, 3/8, {3/15, 3/22, 3/29*}, 4/6, 4/13, 4/20, 4/27, 5/4, 5/11

* Spring break one of these weeks to suit the most students. Students can join from a distance if out of town on the other days.

Classes will generally begin with a warm-up or check-in, e.g., sharing of highlights of reflections and annotations added to the blog or a reflective activity, except weeks 1, 14, and weeks when there are presentations.

Pre-semester preparation

Read Part I, Dawn, of Butler, O. (1987-89) Lilith's Brood. NY: Warner Books (also available as a separate volume).

If you can make time, also read Haraway, D. and Goodeve, T. N. (2000). How Like a Leaf. New York: Routledge.

Class 1. Cultivating support for ongoing learning I

The basic rhythm and experience of the course introduced by instructors and alums. Everyone begins to get to know each other's interests. Initiate the process of formulating a personal plan for ongoing inquiry that troubles the boundaries of knowledge production in the academy and sciences, especially as they concern race and gender.

Spoken autobiographical narratives with Connections and Extensions responses, Reflections of alums, Introduction to Project-Based Learning and Class routines (private learning journal, blog, check-in, focal reading, workshop, presentations, annotations, dialogue around written work, peer commentary), Introduction to PBL project 1

Prompt for journal entry: After class 1 and before class 2: Reflect on the "connections and extensions" noted around your autobiographical narrative

Project 1 (classes 2-4)

What does it cost to establish knowledge in a certain place at certain time for a certain people?

-A project that leads us into interpretation of the cultural dimensions of science-

In the late 1980s, the feminist historian of science, Donna Haraway, asked a question of this form in a playful community cable TV program interpreting the covers of National Geographic that feature primates (Paper Tiger 1987). Taking the video as an entry point to her interpretation of primate studies, this project asks you to consider the issues about interpretation below and, informed by that, to produce a mock-up of a museum display and text interpreting Haraway's video or texts in their 1980s context. (ICA 2015 might stimulate your thinking about museum displays, even though the displays are not about science, while Haraway 1989a places museum displays about life science in a particular historical context.)

Issues about interpretation include: How does one link some aspect of science to some aspects of the social and cultural context? How does one acknowledge what the science or scientists literally say at the same time as claiming significance for one's interpretation of contextual influences that may or may not be explicit? How does the outside social context get inside the science—is this the right image of what is going on? Does interpretation follow the same or different rules of evidence and reasoning from scientific claims? Where do questions come from? Where do interpretative themes come from? How does one link some interpretation of science to some aspects of the social and cultural context, especially as it concerns race and gender?

What does it cost to advance a scientific account or an interpretation in a certain place at certain time for a certain people? Whose labors and craftwork gets appropriated? Whose voices and texts get silenced? Whose expertise is made into facts, machines, policy, medicines, topics of cultural and political discourse, science education, and so on? What people are discussed and treated according to the group they are members of? What exclusions do you detect in the space of representation; what or who becomes an object of representation rather than a subject of interpretation?

In what ways can we learn to teach/engage others to interpret the cultural dimensions of science?

(Note: Haraway's 1989 account of primate studies, as well as Octavia Butler's 1987-89 Xenogenesis, which enters project 3, might be seen as inspiration or precursors for the active field of animal studies, which is currently active in expanding the category of sentience, even citizenship, beyond the historically traumatic category of the "human.")

Sequence of steps and classes:

Class 2. Generating questions for inquiry (KAQ framework [Knowledge-Action-Questions; Taylor and Szteiter 2012, 105-106]) & looking for answers in the texts

Focal reading: Haraway, "Teddy bear patriarchy"

Prompt for journal entry (between class 2 & 3): Reactions at this early stage to be asked to identify and pursue one's own inquiries

Class 3. 5-phase Dialogue process (aka Dialogue Hour) to share and clarify what we are inquiring into regarding the project.

Focal reading: Duchamp, "The forbidden words of Margaret A."

Prompt for journal entry (between class 3 & 4): At the time Delaney wrote, he, like you are now, was grappling with learning how to read Haraway.

Class 4. Presentations and submission of written product = a mock-up of a museum display and text interpreting Haraway's video or texts in their 1980s context.

Focal reading: Delaney, "Reading at Work"

Prompt for journal entry (between class 4 & 5): Digest comments on presentation

Between Class 4 & 5. Comment on the written product of another student.

Class 6. Resubmit your product, revised in response to comments from an instructor and a peer.

References (cited in the project description or possible focal readings):

Birke, L. (2002), "Intimate Familiarities? Feminism and Human-Animal Studies." *Society and Animals* 10:4, 429-436.

Delaney, S. R. (1996) "Reading at Work, and Other Activities Frowned on by Authority: A reading of Donna Haraway's "Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980's," in Delaney, Longer Views: Extended Essay

Duchamp, L. "The forbidden words of Margaret A.," in A. and J. Vandermeer (eds.) *Sisters of the Revolution: A Feminist Speculative Fiction Anthology*. Oakland: PM Press.

Haraway, D. (1989) Primate visions: Gender, Race, and Nature in the World of Modern Sciences. New York: Routledge.

---- (1989a) "Teddy bear patriarchy: Taxidermy in the Garden of Eden, New York City, 1908-1936," in *Primate Visions* (originally published in 1984/5 in *Social Text* 11: 20-64).

---- & Goodeve, T. N. (2000). How Like a Leaf. New York: Routledge.

ICA. (2015) Leap Before You Look: Black Mountain College 1933–1957

<https://www.youtube.com/watch?v=9URP8GgSg5M>

Marchesini, R. (2010), "Alterity and the Non-Human," trans. Boria Sax. *HUMaNIMALIA* 1:2, 91-96

Paper Tiger TV (1987) Donna Haraway Reads "The National Geographic" on Primates,

<http://papertiger.org/node/751>

Taylor, P. J., & Szteiter, J. (2012). Taking Yourself Seriously: Processes of Research and Engagement.

Arlington, MA: The Pumping Station

Project 2 (classes 5-7)

Science and literature exploring life on the near-future earth

A project in which we contrast the imaginaries of fiction, especially as they concern race and gender, with those of scientists and science-emphasizing commentators.

First, let us provide some background:

Peter's most-cited (and most-quickly written) 1992 article, "How do we know we have global environmental problems" (revised in 1997) is not denying climate change, but problematizing each term in the question. Who is the "we" that knows? How does the knowledge portray the problems as "global" and "environmental"? And so on. In this vein, the paper noted:

"Tightening long-term projections [of climate change] or highlighting their severity is not... the only means by which policy responses to climate change could be catalyzed. As political scientist Glantz (1989) has observed, extreme climate-related events, such as droughts, storms, and floods, already elicit socio-political responses that can be relatively easily studied. Recent and historical cases of climatic-related "natural hazards" shed light on the impact of different emergency plans, investment in infrastructure and its maintenance, and reconstruction schemes. Policymakers, from the local level up, can learn "by analogy" from experience and prepare for future crises. Glantz's approach is valuable whether or not these crises increase in frequency (or are already increasing in frequency) as a result of global climate change. Instead of emphasizing the investigation of physical processes and waiting for uncertainty to be eliminated before action is taken from the top, this approach calls for systematic analysis of effective versus vulnerable institutional arrangements. Such discussion of specific, local responses to climate change has been occurring. Nevertheless, the vast majority of funds for global change research is currently being devoted to improving GCMs and allied climatic studies..."

In calling for analysis of specific, local institutional responses, Glantz and then Peter did not, at that time, emphasize the possibilities—perhaps necessity—of constructing alternatives to the gendered, racialized, economically exploitative, and hetero-normative aspects of institutions. What is evident, 25 years later, is that climate change discourse, shaped by scientists and commentators such as Monbiot (2006), remains centered on how change is being forced on us by inexorable physical processes. However, novelists,

such as Atwood (2009) and Butler (1994), seem to be more imaginative about who could be involved in shaping life in future conditions, making difference central to how something other than hell on earth has to be formed (see also Arnason 2010, Richter 1967). Similarly, Afrofuturism, a movement in the arts based on alternative axioms, including the relation of oppression to climate change, offers a perspective of radical change as hopeful for and even managed by peoples of color (Barr 2008, Sun Ra, Womack 2013).

Now for the project proper:

This project asks you to bring scientists and interpreters of literature into constructive conversation around responding to “crises [that] increase in frequency... as a result of... climate change,” especially as crises might implicate race and gender. You invent the form your product takes. Some possibilities include—but are not limited to—a sequenced set of excerpts from novels annotated so as to guide scientists into reading and writing more critically, a guide for bringing literary analysis to bear on popular climate change books, an imagined future exchange starting from the question “So, white guy, what did you do in the climate change crises?”

Sequence of steps and classes:

Class 5. Intersecting processes mapping of fictional text (activity based on Taylor 2010)

Focal reading: Taylor, P. J. (1997). How do we know we have global environmental problems?

Prompt for journal entry (between class 5 & 6): TBA

Class 6. Work-in-progress presentations in small groups and extended discussion

Focal reading: TBA—Angela, “Super-natural futures” or excerpt from Butler (1994)

Prompt for journal entry (between class 6 & 7): TBA

Class 7. Presentation and submission of written product that “bring scientists and interpreters of literature into constructive conversation around responding to “crises [that] increase in frequency... as a result of... climate change.”

Focal reading: TBA

Prompt for journal entry (between class 7 & 8): Digest comments on presentation

Between class 7 & 8. Comment on the written product of another student.

Class 9. Resubmit your product, revised in response to comments from an instructor and a peer.

References (cited in the project description or possible focal readings):

Angela (2013). “Super-natural futures: One possible dialogue between Afrofuturism and the Anthropocene,” <https://mutablematter.wordpress.com/2013/08/13/super-natural-futures-one-possible-dialogue-between-afrofuturism-and-the-anthropocene/>

Arnason, E. (2010), *Mammoths of the Great Plains*. San Francisco: PM Press

Atwood, M. (2009) *The Year of the Flood*. Toronto: McClelland & Stewart.

- Barr, M. S. ed. (2008). Afro-Future Females: Black Writers Chart Science Fiction's Newest New-Wave Trajectory. Columbus: Ohio State University Press.
- Butler, O. E. (1994). Parable of the Sower. New York: Quality Paperback Book Club.
- Glantz, M. ed. (1989). Societal Responses to Regional Climactic Change: Forecasting by Analogy. Boulder, CO: Westview Press.
- Monbiot, G. (2006) Heat: How to Stop the Planet From Burning. London: Allen Lane.
- Richter, A. (1967), trans. E. Gauvin. "The Sleep of Plants." In A. and J. Vandermeer, Sisters of the Revolution: A Feminist Speculative Fiction Anthology (pp. 131-136). Oakland: PM Press.
- Taylor, P. J. (1997). How do we know we have global environmental problems? Undifferentiated science-politics and its potential reconstruction. In P. J. Taylor, S. E. Halfon & P. E. Edwards (Eds.), Changing Life: Genomes, Ecologies, Bodies, Commodities (pp. 149-174). Minneapolis: University of Minnesota Press.
- Taylor, P. J. (2010ms), "Diagramming of Intersecting Processes (a teaching activity under development)," <http://wp.me/pPWGi-AT>
- Womack, Y. L. (2013). "Project Imagination," ch. 3 of Afrofuturism: The World of Black Sci-fi and Fantasy Culture. Chicago: Lawrence Hill Books.
- Sun Ra, *Space is the Place* (documentary film)

Project 3 (classes 8-10)

Genomic citizens and misfits in a digital age

A project in which we address the complexity of promises, fears, and claims being made about genetics in this evolving digital era, especially as they concern race and gender.

First let us set the scene:

Since the advent of the Human Genome Project, there has been a proliferation of discourse (in scientific journals, the popular press, and in cultural productions) about genetics, the gene, the genome, genomics, epigenetics, biotechnology, gene-based personalized medicine, synthetic biology, and so on. Some of this discourse includes new or revived claims about race and gender (see Bibliography on genetics, kinship, social media, race, gender). In the same period we have seen the rise of the internet and social media, with accompanying claims that, for example, “the Web... is challenging the bedrock concepts of our culture: space, time, matter, knowledge, morality, etc.” given that it resists the idea that knowledge should be “context-free and universal.” The Web provides “databases” of information and at the same time “reveal[s] what you weren’t expecting... a link we hadn’t seen, an unfolding we hadn’t anticipated... Making a decision means deciding which... “inputs” to value and how to fit them together to make a coherent story” (Weinberger 2002). At the same time, as internet skeptics, such as Morozov (2011), remind us, there is a “dangerous fascination with solving previously intractable social problems with the help of technology [that] allows vested interests to disguise what essentially amounts to advertising for their commercial products in the language of freedom and liberation.”

Now for the project proper:

Suppose we admit to lacking a coherent story of the promises, fears, and claims being made about genetics in this evolving digital era, especially as these developments shift our ideas and actions concerning race and gender. This project then asks you to contribute to a syllabus for a course that would better prepare someone like you to study and engage with these topics, so that, at some future time, you might have a coherent narrative and/or teach about these topics.

Further, let us imagine that the shared pre-semester reading is Octavia Butler’s 1987-89 Xenogenesis (aka Lilit’s Brood) trilogy, which tells a story about race, gender, sexuality, and difference in a future where genetics is manipulable and our human descendants are constructs. Let us also provisionally title the course: “Genomic citizens and misfits in a digital age.” For the product of this project, each student will contribute either a class for this imagined course, a semester-long course project, or a toolbox of methods.

In your written product, make explicit the rationale for the lesson in relation to the goal that the course as a whole would better prepare someone like you to study and engage with these topics, so that, at some future time, you might have a coherent narrative and/or teach about the topics (i.e., the promises, fears, and claims being made about genetics in this evolving digital era, especially as these developments shift our ideas and actions concerning race and gender).

The contributions should include a rationale and possible connection with other components of the syllabus, but there is no expectation that everyone's contributions cohere or that there is no overlap. (This said, keep in mind the question of project 1: "What does it cost to establish knowledge in a certain place at certain time for a certain people?") Nor is there an expectation that your contribution is in an area that you know well—the aim of this project, as in all PBL, is that you learn through your inquiries, which typically open out wide at first and evolve in unexpected directions—although presumably ones that concern race and gender—before you focus in to a coherent product.

Sequence of steps and classes:

Class 8. Situational map (Clarke 2005) of selection of readings from bibliography provided by instructors

Focal reading: Clarke, A. (2005), Chapter 3

Prompt for journal entry (between class 8 & 9): TBA (Possible: Compare and contrast your situational map and the others)

Class 9. TBA

Focal reading: TBA (Possible: Braidotti "Cyberteratologies")

Prompt for journal entry (between class 9 & 10): TBA

Class 10. Presentation of a class for this imagined course, a semester-long course project, or a toolbox of methods.

Focal reading: TBA

Prompt for journal entry (between class 10 & 11): Digest comments on presentation

Between Class 10 & 11. Comment on the written contribution of another student.

Class 12. Resubmit your contribution, revised in response to comments from an instructor and a peer.

References (cited in the project description or possible focal readings):

Bibliography on genetics, kinship, social media, race, gender (to be supplied)

Braidotti, R. (2003) "Cyberteratologies: Female Monsters Negotiate the Other's Participation in Humanity's Far Future." In Maureen S. Barr, ed., Envisioning the Future: Science Fiction and the next Millennium.

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Clarke, A. (2005). Situational Analysis: Grounded Theory after the Postmodern Turn. Thousand Oaks, CA: Sage, Chapter 3

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Löwy, I. "FISHing for identity: Maternal–foetal traffic and the change in the meaning of pregnancy" (unpublished paper on microchimerism, 2009).

Mitchison, N.(1975). *Solution Three*. NY: Feminist Press.

Morozov (2011) *The Net Delusion*. NY: Public Affairs.

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Surkan, K. (2015) "Free the Data" ms.

Taylor, P. J. (2009). "Infrastructure and Scaffolding: Interpretation and Change of Research Involving Human Genetic Information." *Science as Culture* 18(4): 435-459.

Weinberger 2002, *Small Pieces Loosely Joined*. Cambridge, MA: Perseus.

Williams, I. (2014). "Kancer Sutra" [poem/images]. *Configurations* 22:2, 229-236.

Project 4 (classes 11-13)

Plans for Practice

A project in which you develop a personal plan to foster the development of others in their learning on some of the issues raised in this course, and practice some of what you plan

This project is an opportunity for you to build on the first three projects and develop your own PBL projects for teaching, prepare grant proposals for further inquiry or activist engagement, or construct syllabi around topics in feminist and critical studies of science and technology. In class sessions, you will have 45-60 minutes to practice some part of a plan for practice with the class as your audience, pretend-students, subjects, jury (for a grant proposal) or critical friends.

Your written product, the plan for practice proper, should have two levels: 1. A plan for your own ongoing learning so as to be able to trouble the boundaries of knowledge production in the academy and sciences. More specifically, so as to be able to interpret sciences in contexts, drawing on and adding to the contributions of feminist, anti-racist, and other critical analysts and activists; 2. Building on the first, personal level, what is your plan for practice to develop your ability to foster the development of others in this same vein.

Sequence of steps:

Class 11, 12, or 13. Practice leading everyone in an activity, lesson etc. from your plan for practice.

Prepare as instructed for other students' activities, lessons, etc., participate during class, then provide feedback.

Focal readings: TBA (according to emerging student interests. Discussed in class if TBA; otherwise, through annotations submitted to the blog)

Prompt for journal entry (after the class when you practice): Digest comments on presentation

Prompt for journal entry (between other classes): TBA (Possible: PBL as feminist pedagogy)

Class 13. Submit plan for practice, revised and developed in response to comments on practice in class.

Between classes 13 & 14. Comment on the written product of another student.

One week after 14. Resubmit your product, revised in response to comments from an instructor and a peer.

Class 14. Cultivating support for ongoing learning II: Where have we come from; where are we going

Preparation:

Peer commentary due on draft final project report (NB: last chance for participation item g)

Assignment checklist and self-assessment using grading rubric ready for review (participation item h)

Bring laptop if you have one

Class session:

Dialogue Process on "Cultivating support for ongoing learning: Where have we come from; where are we going."

Final course evaluation online evaluation (Make a copy for yourself before submitting it.)

V. Bibliography

NOTE: Some of these books are available to borrow from GCWS. See list at <http://wp.me/P7akL5-1z>

- Angela (2013). "Super-natural futures: One possible dialogue between Afrofuturism and the Anthropocene," <https://mutablematter.wordpress.com/2013/08/13/super-natural-futures-one-possible-dialogue-between-afrofuturism-and-the-anthropocene/>
- Arnason, E. (2010). *Mammoths of the Great Plains*. San Francisco: PM Press.
- Atwood, M. (2009). *The Year of the Flood*. Toronto: McClelland & Stewart.
- Barr, M. S. ed. (2008). *Afro-Future Females: Black Writers Chart Science Fiction's Newest New-Wave Trajectory*. Columbus: Ohio State University Press.
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- Butler, O. E. (1994). *Parable of the Sower*. New York: Quality Paperback Book Club.
- Butler, O. (1987-89). *Xenogenesis*. New York: Warner Books.
- Clarke, A. (2005). *Situational Analysis: Grounded Theory after the Postmodern Turn*. Thousand Oaks, CA: Sage, Chapter 3; also Chapter 5.
- Creager, A., E. Lunbeck, et al., Eds. (2001). *Feminism in Twentieth-Century Science, Technology, and Medicine*. Chicago, University of Chicago Press.
- Delaney, S. R. (1996) "Reading at Work, and Other Activities Frowned on by Authority: A reading of Donna Haraway's "Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980's," in Delaney, *Longer Views: Extended Essays*.
- Douglas, M (1966; 2003). "The Abominations of Leviticus," ch. 3 of *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*, 51-71.
- Glantz, M. ed. (1989). *Societal Responses to Regional Climactic Change: Forecasting by Analogy*. Boulder, CO: Westview Press.
- Goto, H. (1995), "Tales from the Breast." *Absinthe*.
- Gross, A. G. (2006), *Starring the Text: The Place of Rhetoric in Science Studies* Carbondale: Southern Illinois University Press.
- Hackett, E., Amsterdamska, O., et al. (ed.), 2008, *The Handbook of Science and Technology Studies*, Cambridge, MA: MIT Press OR Miller, C., Smith-Doerr, L., et al. (ed.), 2017, *The Handbook of Science and Technology Studies*, Cambridge, MA: MIT Press.
- Haraway, D. (1989) *Primate visions: Gender, Race, and Nature in the World of Modern Sciences*. New York: Routledge.
- Haraway, D. J. (1989a) "Teddy bear patriarchy: Taxidermy in the garden of Eden, New York City, 1908-1936," in *Primate visions* (originally published in 1984/5 in *Social Text* 11: 20-64)
- Haraway, D. and Goodeve, T. N. (2000). *How Like a Leaf*. New York: Routledge
- Heintzman, K. (2013). "Love in the time of STS."

- Hogle, L. F. (2008) "Emerging medical technologies," in E. Hackett et al. (2008) The Handbook of Science and Technology Studies, Cambridge, MA: MIT Press.
- Kleinman, D. L. and K. Moore, Eds. (2014). Routledge Handbook of Science, Technology, and Society. Abingdon: Routledge.
- Krieger, N. (2010). The Science and Epidemiology of Racism and Health: Racial/Ethnic Categories, Biological Expressions of Racism, and the Embodiment of Inequality-an Ecosocial Perspective. In What's the use of race? Modern Governance and the biology of difference. Ed. I. Whitmarsh and D. S. Jones. Cambridge, MA, MIT Press: 225-255.
- Lakoff, A. (2008) "The right patients for the drug: Pharmaceutical circuits and the codification of illness," in The Handbook of Science and Technology Studies.
- Law, J. and A. Mol, Eds. (2002). Complexities: Social Studies of Knowledge Practices. Durham, Duke University Press.
- Lock, M. (2008) "Biomedical technologies, cultural horizons and contested boundaries," in The Handbook of Science and Technology Studies.
- Löwy, I. "FISHing for identity: Maternal–foetal traffic and the change in the meaning of pregnancy" (unpublished paper on microchimerism, 2009).
- Marchesini, R. (2010), "Alterity and the Non-Human," trans. Boria Sax. *HUMaNIMALIA* 1:2, 91-96, <http://www.depauw.edu/humanimalia/issue02/marchesini.html> (viewed 19 Jan 17)
- McNeil, M. (2007). Feminist cultural studies of science and technology. London: Routledge.
- Mitchison, N.(1975). Solution Three. NY: Feminist Press.
- Monbiot, G. (2006) Heat: How to Stop the Planet From Burning. London: Allen Lane.
- Moore, K., D. L. Kleinman, et al. (2011). "Science and neoliberal globalization: a political sociological approach." *Theory and Society* 40: 505–532.
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- Taylor, P. J. (2009). "Infrastructure and Scaffolding: Interpretation and Change of Research Involving Human Genetic Information." *Science as Culture* 18(4): 435-459.
- Taylor, P. J. (2010ms), "Diagramming of Intersecting Processes (a teaching activity under development)" <http://wp.me/pPWGi-AT>
- Taylor, P. J. (2012) "Teaching and Learning for Reflective Practice," p. 240-259 in Taylor and Sztetiter (2012)

Taylor, P., J. Szteiter (2012) Taking Yourself Seriously: Processes of Research and Engagement.
Arlington: The Pumping Station

Weinberger 2002, Small Pieces Loosely Joined. Cambridge, MA: *Perseus*.

Womack, Y. L. (2013). "Project Imagination," ch. 3 in Y. L. Womack, Afrofuturism: The World of Black
Sci-fi and Fantasy Culture. Chicago: Lawrence Hill Books.

Additional essays in literary, rhetorical and cultural studies

[to be interpolated into the bibliography above once instructors have made final choices about focal readings and primary versus supplementary materials for each PBL project]

Andrew, L. (2015). Review of Lundy Brown, Breathing Race into the Machine: The Surprising Career of the Spirometer from Plantation to Genetics. *Configurations* 23:1, 127-130.

Campbell, M. B. (2012). tba

Creedon, G. (2014). "Analogical Animals: Thinking through Difference in Animalities and Histories." *Configurations* 22:3, 307-335.

Ehlers, N. (2014). "The Dialectics of Vulnerability: Breast Cancer and the Body in Prognosis." *Configurations* 22.1, 113-135.

Harris, R. A. (1997). Landmark Essays on the Rhetoric of Science: Case Studies. Hillsdale, NY: Lawrence Erlbaum Assoc.

Kurzman, C. (1988). "The Rhetoric of Science: Strategies for Logical Leaping." *Berkeley Journal of Sociology* 33, 131-158.

Leviticus [11:1-2, 22-23, 41-44]. "Things Clean and Unclean" [excerpt, rpt. in E. Hoyt and T. Schulz (1999), Insect Lives (Cambridge: Harvard University Press, 34-35)].

McHugh, S. (2008). "Queer and Animal Theories" [review essay of works by Haraway, Kuzniar, Roughgarden and Rydström]. *GLQ* 15:1, 153-169.

Neill, A. (2014). "The Machinate Literary Animal: Butlerian Science for the 21st Century" (impact of language on evolution, in context of "current inquiry into nongenetic forms of inheritance"). *Configurations* 22:1, 57-77.

Poovey, M. (1998). "Figures of Arithmetic, Figures of Speech: The Problem of Induction in the 1830s," ch. 7 of A History of the Modern Fact, 307-328. Chicago: University of Chicago Press.

Subramanian, B. (2001). "The Aliens Have Landed: Reflections on the Rhetoric of Biological Invasions." *Meridians* 2:1, 26-40.

See also:

Bibliography for Project 3.

Contributions from students 2009, 2011, and 2013 & 2015.

Other bibliographic resources 2009, 2011 (feminist epistemology).

VI. Notes on course routines and assignments

Class routines

Blog

The private wordpress blog serves as the out-of-class-time space for sharing and exchange, including posting of annotations and project products (after revision in response to instructor and peer comments). After the class is over, students can continue to refer back to the resources accumulated there.

Check-in

Classes will generally begin with a warm-up and check-in, e.g., sharing of highlights of reflections and annotations added to the blog or a reflective activity, except weeks 1, 14, and weeks when there are presentations.

Focal Weekly Reading

The diversity of students' inquiries on the four projects and thus range of reading is unavoidable and important. However, as a response to the need expressed by past students for some shared referents, *one* focal reading will be assigned each week to be discussed in various modes (to be specified), such as annotations posted online ahead of class, time-limited spoken reports on the 9 categories of note-taking summarized at <http://wp.me/p1gwfa-J8>, guided close reading, and five-phase dialogue (<http://bit.ly/FivePhase>).

Workshop

Except when there are presentations, most class sessions, after the check-in and discussion of the focal reading, take the form of a workshop, in which various activities are used to move along your inquiry for the given PBL project. Details of these activities are linked to the class session on the course website.

Presentations with Plus-Delta Feedback

When you prepare to give a well-prepared presentation, when you hear yourselves speak your presentation, and when you get feedback, it usually leads to self-clarification of the overall argument underlying your inquiry and written product. There may or may not be time for extensive discussion, but your revision of the draft product will be informed by everyone else in the group providing "plus-delta" feedback: plus = something appreciated; delta = something to help further development, e.g., suggestions, questions, contacts, and references. You can also learn from compare-contrast with the other students' presentations.

Visual aids should be prepared without diverting your time away from your ongoing inquiry. Peter: "These days I use pdf's, not Powerpoint, for all my talks, in part because of bad experiences with some images not showing up when ppt files got shown on a different operating system. But mostly because I can write

and revise outlines in Microsoft Word and then, when I'm ready, I change the font size, "print" as a pdf, and I'm ready to go live. Preparation time for my talks is not diverted into making animations, backgrounds, fade-ins and other non-essential features of a talk. Even if you don't take this tip, try to make one introductory slide that captures the overall structure and logic of your inquiry. This might be enough of a visual aid that you can talk to that slide and not have to prepare many others." Mary: Agreed. I would also point to Edward Tufte's work, especially *The Visual Display of Quantitative Information* (and his cheap but excellent and hilarious pamphlet "The Cognitive Style of Powerpoint"): <https://www.edwardtufte.com/tufte/>

Annotations

In order to learn from the inquiries of the other students, annotated references or resources (=person, organization...) related to the projects or common readings should be added (regularly, not all in a clump) to the evolving bibliography on the blog.

(Annotations should convey the article's key points as well as its connection to the student's own inquiries and interests. Examples from past years will be provided. Prepare first on your computer, then copy and paste the annotated reference into blog. Specify the category Bibliography.)

Dialogue around Written Work

The instructors try to create a dialogue with each student around written work, that is, around your writing, our responses, and your responses in turn. For each submission one of us makes comments on a cover page that aim to show you your voice has been heard and to reflect back to you where you were taking us. After the overall comments we make specific suggestions for how to clarify and extend the impact on readers of what was written. You then revise and resubmit the submission in response to our comments and peer commentary (see below). The goal is not that you make changes to please me us or to meet some unstated standard, but that you as a writer use the eye of others to develop your own thinking and make your written exposition of that thinking work better on readers.

Peer commentary

An instructor will forward another student's project drafts to you by email for peer review after you submit your own draft.

One component of cultivating support for ongoing learning is sharing one's work at the same time as defining the kinds of response you need at that point. Peter Elbow provides valuable perspectives and options for when you decide what approaches to commenting you ask for as a writer (which you should state at the top of your draft) and what to use as a commentator. -You may be used to making lots of specific suggestions for clarification and change in the margins, but such suggestions do not often lead

students to go beyond touching up into re-thinking and revising their ideas and writing. This said, all writers value comments that reassure them that they have been listened to and their voice, however uncertain, has been heard.-

Elbow, P. (1981). *Writing with Power*. New York: Oxford University Press, chapters 3 & 13.

Elbow, P., & Belanoff, P. (1999). Summary of Kinds of Responses. In *Sharing and Responding* (pp. 7ff). Boston: McGraw-Hill. (<http://www.faculty.umb.edu/pjt/elbowresponses.html>)

Private Learning Journal

Reflection on your experience of the course process, especially in relation to the two desired outcomes, namely: you will have charted a path into an ever-growing body of work on the interpretation of sciences in contexts, to which feminist, anti-racist, and other critical analysts and activists have made significant contributions; and you will have formulated a personal plan for ongoing inquiry that troubles the boundaries of knowledge production in the academy and sciences.

Students need only share enough of these journals with the instructors to show that they are making entries at least once per week. However, students may also share entries on the blog if they wish. Some prompts for journal entries are given in the class schedule.

Notes on assignments

[Examples from previous courses will be linked to the course blog.]

Written assignments and presentations

- The specifications and deadlines for each written assignment are given in the description for each project.
- Presentations (length TBA according to number of students in course) derived from time spent between classes and during in-class workshop on each PBL project.
- Initial submission and revised products are submitted by email, with the subject line GCWSassignment. Files should be renamed before submission to read GCWSxyProjectz + revised (when revised), where xy = your initials and z = the project number.
- Alternate which instructor you submit the initial submission to.
- Professional presentation of written submissions means typos and spelling mistakes are eliminated, pages are numbered, fonts are consistent, and references are cited in a consistent format.

Participation items

a. Attendance and Participation in class meetings based on Preparation between classes, including focal reading (14 items)

- incl. punctuality, no cell phone calls
- b. “Treasure Hunt”, to get familiar with organization of course materials and requirements
- c. Annotated reference or resource (such as a person, organization...) added at regular intervals to the evolving bibliography on the blog (8 items)
 - Annotations should convey the article’s key points as well as its connection to the student’s own inquiries and interests. Examples from past years are provided. Prepare first on your computer, then copy and paste the annotated reference into blog. Specify the category Bibliography.
- d. Reflection on your experience of the course process and your learning in the PBL format (at least 10 weekly entries, each worth ½ an item, adding up to maximum of 5 items)
 - Although posting the entries to the blog is optional, interaction between class meetings is valuable in this course because we are based on different campuses and because of the evolving nature of the PBL experience. Specify the posting category Reflection.
- e. Minimum of two in-person or phone conferences on your assignments and projects—one before class 5, the other, with the other instructor before class 10 (2 items)
 - These are important for checking in, taking stock, getting a recharge, ensuring timely resolution of misunderstandings, and opening up significant issues about one’s relationship to the course material and objectives. If you are falling behind, conferences are especially important.
- f. Exercises to prepare for class, for classes TBA; 4 items)
 - submitted as comments on designated blog posts
- g. Peer commentary on other students’ draft products (3 times, by the class after posting; 3 items)
 - An instructor will forward another student’s project drafts to you by email for peer review after you submit your own draft.
 - *If you won’t be able to review an assignment sent to you, immediately reply to the instructor so the assignment can get sent to a different student.* Send comments by a week after the draft submission date to the student with cc to the instructor. Make sure the subject line remains GCWSassignment. To get the kinds of response you need, state what you are looking for at the top of your draft.
- h. Your assignment Checklist filled-in during semester and submitted with self-assessment on the rubric at the last class (1 item).