

Office Hours:	M, R 11:00 am -1:00 pm. W by appointment only
Required Text:	<i>Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century</i> (Dorothy Roberts) and <i>The Social Life of DNA: Race, Reparations, and Reconciliation After the Genome</i> (Alondra Nelson); <i>Biochemistry</i> (Lehninger); Links and handouts will be given for journal articles
Supplemental Texts:	<i>Dying in the City of the Blues: Sickle Cell Anemia and the Politics of Race and Health</i> . (Keith Wailoo); <i>Medical Apartheid: The Dark History of Medical Experimentation on Black Americans From Colonial Times to the Present</i> . (Harriet Washington); <i>How Cancer Crossed the Color Line</i> (Wailoo); <i>Genetics and the Unsettled Past: The Collision of DNA, Race, and History</i> (eds. Wailoo, Nelson, and Lee); <i>Bad Blood</i> (James Jones); <i>Making the Mexican Diabetic: Race, Science, and the Genetics of Inequality</i> (Michael Montoya).
Prerequisites:	CHEM 311 or BIO 489 ; BIO 120 or BIO 125 ; MAT 231 or MAT 211 ; NOTE : This course can be used as an alternative to CHE 446 Advanced Biochem.
Requirements:	Binder (2-3 in), dividers and loose-leaf paper as the notebook, portable electronic device (ipad, iphone/android or laptop). Access to Coursera and Groupme (free accounts).

I. COURSE DESCRIPTION & STRUCTURE

Race & Genetics is an one-semester advanced lecture course exploring the topic of “race” and how it has often been used to naturalize social inequality by assigning people to hierarchically ordered groupings **based on assumed biological difference**. Scientific discourse has been a key resource in the history of this practice. But, it has also been a crucial tool for dismantling race. We will answer questions as to whether the term “Race” is a social construct as well as look at the links been race and medicine/science/genetics. As biochemists, we will delve into these questions from a biochemical perspective by understanding terms such as admixture, SNPs or single nucleotide polymorphisms, haplotypes, DNA-sequence variant, genome, epigenetics and much more.

This course has been partially designed to shift the traditional focus from intensive memorization of the individual components to a more general appreciation of the connectivity of perceived social topics to the scientific world. Various teaching methods will be employed, including traditional lecturing using the projection system, chalk-talks, round-table discussions, group activities, individual presentations, blogs, experiential projects and visiting speakers. Library and internet research by the student will be required.

COURSE GOALS

This course seeks to develop the student’s skills for critical analysis of the scientific literature, provide guidance in technical writing and develop an overall robust view of race and genetics. Upon completion of this course, the student should be able to:

- Discuss how racial beliefs, ideologies and typologies are embedded in science/biology/genetics
- Examine (and deconstruct) the literature concerning debates on race and science, its origins, the census, eugenics, intelligence testing, sterilization, racialized disease/medicine, implicit bias, human genome, personalized medicine, biobanks, surveillance

- Situate race topics in a socio-historical and scientific timeline/context
- Demonstrate an understanding of scientific terms such as SNPs, admixture, epigenetics, haplotypes, alleles, GWAS, variants
- Use genetic variation or population genomics tools to address questions of race and ancestry
- Generate new knowledge and frameworks for thinking about *race, ethnicity, nationality, ancestry, population and post-racial society* in a more nuanced and reflective way

II. CLASS POLICIES

ATTENDANCE: Student participation is an integral part of successful mastery of concepts taught in the course and is therefore part of the grade. Regular and prompt attendance is essential for all lecture sessions. Attendance will be assessed as a part of the participation grade.

WITHDRAWAL POLICY: The grade of "W" is given when the withdrawal is processed before the midpoint of the semester. It is the student's responsibility to withdraw through the registrar's office.

ACADEMIC DISHONESTY: All members of the academic community of Spelman College are expected to understand and follow the basic standards of honesty and integrity, upholding a commitment to high ethical standards. Students are expected to follow ethical standards in their personal conduct and in their behavior towards other members of the community. They are expected to observe basic honesty in their work, words, ideas, and actions. Any student found by the instructor to have engaged in academic misconduct on a graded test, assignment, or examination is in violation of the Spelman College Academic Integrity Policy and will be assigned a grade of "F" for the course and may be subject to other sanctions outlined in the Spelman College Bulletin.

PLAGIARISM: Using the words of another as one's own is known as plagiarism. Plagiarism is inappropriate in this course and in all other situations, and constitutes a violation of the Spelman College Academic Integrity Policy. Students should avoid the use of quotations in their own writing to develop mature independent thought and scientific writing skills. Students are strongly encouraged to study in groups, but all assignments should be performed independently. Responses on examinations should be made independently. Plagiarism will result in a 0/F on the first assignment for all parties involved and a warning; a repeat offense will result in a F in the class and reporting to the Office of Student Affairs and the Undergraduate Deans. Keep in mind that this is your work. You are ethically and scientifically bound to submitting correct information.

AMERICANS WITH DISABILITIES ACT (ADA) STATEMENT: Spelman College is sensitive to the special needs of students with disabilities. If you are a student who is disabled as defined under the ADA and require assistance or support services, please seek assistance through the Office of Disability Services at 404-270-5289 in MacVicar Hall. A counselor will be available to coordinate reasonable accommodations.

***WEB ENHANCED:** This class is considered web-enhanced meaning that it is a face-to-face course that uses forms of electronic media to post information, deliver content, provide learning resources, and foster student interaction outside of the classroom. This includes posting questions or online work on Groupme, Moodle, voicethread, Coursera or another blog/learning management platform; questions that we were unable to fully explore during our in class period sessions.

III. STUDENT EVALUATION

GRADE: The course grade is determined from a weighted average of two exams (mid-term and final, 40%), bi-weekly critiques (15%), genomics and epigenetics online module (10%), book review and conversation (10%), class participation and discussion (10%) and a genetics variation project (15%).

Tests (40%): Two exams are scheduled for the semester. The exams will be tentatively given on the date scheduled. They may include multiple-choice type questions, short answer questions, or word problems involving biochemical calculations. Comprehension of course material is expected to be cumulative and this will be reflected in the exams. Only a Dean's excuse is acceptable for absence from an exam.

Class participation and discussions (10%): This is an advanced level course, which means that the class has been designed to promote student engagement in inquiry and critical thinking. Students will discover that there will be a continuum of topics they may have used in other courses and that it is expected for them to elicit prior knowledge of those topics. This is an interactive class. Students are expected to attend and be prepared for class. Over the course of the semester, each student will serve as a co-discussion leader** by presenting a 30 minute synthesis or overview of the assigned reading(s), after which the discussion will be opened to the entire class. Students are encouraged to supplement the assigned readings with other relevant readings and/or video clips. Given the criticality of class participation, it is imperative to keep up with the reading assignments and be well prepared (this means having thought critically about the readings) to engage in a spirited, yet respectful discourse. It is highly recommended to take notes and formulate questions while reading. Students are expected to be active participants. Always bring readings, notes and questions to each class. Participation is not evaluated in terms of how many times one makes a comment, but by a clear demonstration that the material/assignments have been read and comprehended, and the quality of one's overall engagement in the discussion. I pads or laptops are a must for this class.

** Discussion leaders or discussants are expected to lead the discussion, including calling on colleagues to respond or comment. To facilitate the process, the discussants will email the class at least 48 hours prior to class, a synopsis of the assigned reading(s) outlining the purpose and main argument(s)—at most one typed paragraph (bulleted preferred). At the end of each class discussion, the instructor will highlight the major points covered in the discussion and provide feedback on critical issues not covered or inadequately covered.

Genomic Technologies & Epigenetics Online Module (10%): To pair with the lecture, students will do an in-depth analysis of background information on genomics and epigenetics using Coursera as the learning platform. For Fall 2016, students will be required to register with Coursera for a 4-week online course on Introduction to Genomic Technologies, sponsored by the Johns Hopkins University (enroll the week of August 29). And, a 7 week online course on Epigenetic Control of Gene Expression, sponsored by the University of Melbourne (this course will be truncated due to end of semester at Spelman). These online modules are considered MOOCs (massive online open courses), which delivers learning content online to any one who wants to take the course. This workshop/course/module will add another dimension to further enhance and supplement the scientific discourse on genomics and epigenetics. Students will take quizzes online with the module. A total of 10 grades from those quizzes will be used as the online module assessment. Students will have to show proof of the grades received in the MOOC in order to receive the appropriate credit.

Registration is free using the following links: <https://www.coursera.org/specializations/genomic-data-science> and <https://www.coursera.org/learn/epigenetics> **The first module begins on August 29, 2016 and the second module begins on October 24, 2016.**

Bi-weekly critiques and seminar summaries (15%): A one page typed (single-spaced) critique of selected weekly readings is due in class every Wednesday (unless otherwise noted) **from the discussant(s) ONLY**. Critiques are not summaries of the readings. Rather, they are focused and documented arguments. Informed opinions are encouraged. The critique must examine the strengths and weaknesses of the authors' argument/evidence and assess the theoretical framework and methodology. The primary purpose is to demonstrate that the readings were not only read, but also comprehended. The critiques must clearly demonstrate a strong command of the materials. Seminar summaries will be included in this grading scheme. Students will be required to attend one or two seminars this semester. The first seminar will be the *Race and Racism* Event on **Wednesday, October 5 from 3-5 pm** at Georgia Tech Student Center Theatre.

Book review and class conversation (10%): This semester's major book review will be on *The Social Life of DNA: Race, Reparations, and Reconciliation After the Genome* by Alondra Nelson. The review will be an extended form of the weekly critiques. The book review or deconstruction (no more than 2 single space pages) follows the format of the bi-weekly critiques with the addition of a brief synopsis identifying the topic and its significance, findings, discussion of the authors' major arguments, strengths, weaknesses, theoretical framework, methodology and implications of the findings for future research. Please use well-documented scholarly citations and a reference/bibliographical listing to support your statements. The book will be discussed and presented as a group. BTW, Dr. Nelson will be speaking next semester at Georgia Tech in April 2017. Please consider attending and getting your book signed.

Finding my Roots-DNA Ancestry investigation (15%): To enhance the classroom lectures, you will use your own DNA "fingerprints" as a starting point to introduce population genomics, understand population differences based on genomic data and determine proportion genetic ancestry. The experiment will use commercial ancestry kits to "unravel" your own ethnic mixes. These commercial ancestry kits have the world's largest consumer DNA database. We will also question genetic surveillance and the expansion of DNA data banking by states and the federal government. Are we adding our own biological samples/DNA to a repository that perpetuates "monitorization" of people by race? Students will be assessed on the understanding, outcomes of the experiments presented as a group in the form of a poster and oral presentation. Experiments need to be done and returned no later than Wednesday, September 28 to ensure that results come back before the end of the semester. Final project due the last day of class.

Grading Scale:

93-100 A	90-92 A ⁻	87-89 B ⁺	83-86 B
82-80 B ⁻	77-79 C ⁺	76-70 C	66-69 D ⁺
65-60 D	Below 60 F		

Example Class Schedule:

Meeting Dates	Topics and Readings
Aug 18-R Introduction	Intro to Class—Trayvon Martin, Sandra Bland, Michael Brown and the significance of Ferguson, MO and Dred Scott. Expectations of the class. Race & Genetics
Aug 23-T Introduction Aug 25-R	PBS RACE-The Power of an Illusion- <i>The Difference Between us</i> (video); Syllabus review (no class due to opening convocation)

Aug 30-T Introduction	Comparison of Race is not biology versus Race is biology? Review of film. Race & Genetics
Sep 1-R (Genomics MOOC begins)	Recap of class to date. Citizenship and Race and a review of the census. Post-Racial Society? Give articles by from Science, Huffington Post and Fullwiley. The Doll Test.
Sept 6- T Sept 8-R Believing in Race in the Genomic Age: Biopolitics of Race	Chapter 1- <i>The Invention of Race and Controversies</i> ; Hot Topics (Serena and Race Today); and Matching the Face with Race Exercise? Position paper/paragraph on Race as a social construct due F, Sept 9 by 11:55 pm. (Critique #1 DUE) *Outside video streaming from the American Renaissance by Jared Taylor. Also find articles mentioned in the American Renaissance video “ <i>The Biological Reality of Race</i> ”.
Sept 13- T Sept 15-R	Ch 2- <i>Separating Racial Science from Racism</i> Discussants: Chelesa & Theophilia -critique due R Implicit Bias Test (https://implicit.harvard.edu/implicit/) Hot Topics (The Black diaspora in America)
Sept 20-T Sept 22-R The New Racial Science	Ch 3- <i>Redefining Race in Genetic Terms</i> Discussants: Ebony & Daphny -critique due R Human Genome Project, Ancestry Testing and GWAS; Back to the Basics- genetics; Virtual Labs, Epigenetics http://learn.genetics.utah.edu/
Sept 27- T Sept 29-R The New Racial Science	Ch 4- <i>Medical Stereotyping</i> Discussants: Courtney & Chelesa -critique due R Alonda Nelson and Rick Kittles (video) Hot Topics (Medical Treatment of Blacks today-profiling) Complete DNA test to submit by mail.
Oct 4-T Oct 5-W (Seminar at GT) Oct 6- R The New Racial Science	Ch 5- <i>The Allure of Race in Biomedical Research</i> Discussants: Theophilia & Ebony -critique due R
Oct 11-T (Fall break) Oct 13- R The New Racial Science	Ch 6- <i>Embodying Race</i> Discussants: Daphny & Courtney -critique due R Pay it forward! National Chemistry Week Review for Midterm; ; Genetics overview
Oct 18-T and Oct 20-R	MIDTERM- Parts I and II

<p>Oct 25-T Oct 27-R The New Racial Technology Epigenetics MOOC begins</p>	<p>Ch 7- <i>Pharmacoethnicity</i> Assessing Race-Based Pharmaceuticals & Personalized Medicine; Discussants: Chelesa & Theophilia-critique due R</p>
<p>Nov 1-T Nov 3-R The New Racial Technology</p>	<p>Ch 8 <i>Color-Coded Pills</i> Discussants: Ebony & Daphny-critique due R BiDiI Discussion</p>
<p>Nov 8-T (Election Day) Nov 10-R The New Racial Technology</p>	<p>Ch 9 <i>Race and the New Biocitizen</i> Discussants: Courtney -critique due R Data analysis population genomics project</p>
<p>Nov 15-T Nov 17-R</p>	<p>Ch 10 <i>Tracing Racial Roots</i> Video-Henry Louis Gates (Film)</p>
<p>Nov 22-T The New Biopolitics of Race</p>	<p>Ch 11 <i>Genetic Surveillance</i> Thanksgiving Holidays</p>
<p>Nov 29-T (final Day of class) Dec 6 (Tues, 1-3)- Final Exam</p>	<p>Ch 12 <i>Biological Race in a "Post Racial" America</i> Exam review, Seminar #2, Book Review, genetic ancestry project results DUE last day US Census Revisit.</p>

Class Assignments are subject to change.