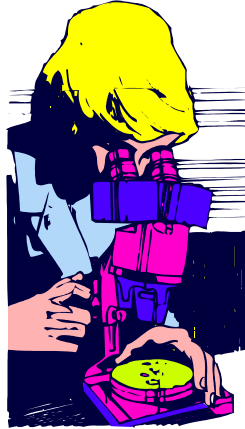


WMS 220 Women and the Natural Sciences MWF 10-11 132 Washburn
University of Rhode Island

Spring 2005 Professor Karen Stein Office Hours MWF 11-11:30; TWTH 1-3
Phone 874-5547 e-mail wmsdir@etal.uri.edu Room 315 Eleanor Roosevelt Hall



This course will explore some issues raised by scientific studies that are of special importance to women. Our investigation of women and science will take four main paths.

1. How has science studied women?

Science has often studied women as aberrations, as deviations from a male norm. For example, many important health studies (even of breast cancer!!!) used only men as subjects because women were perceived as anomalies. Thus, we often know a great deal more about men's health issues and treatments than about women's. Now we are learning more about women's lives and bodies, largely because women are demanding representation in studies. By the end of the course you will be able to discuss some of the key scientific studies as they relate to women, for example the HGP, sociobiology, eugenics, and studies of women's hormones, IQ and health.

2. Who are the women scientists?

How many do you know now? _____
By the end of the course you will recognize the names and contributions of many women scientists.

3. How is science socially

constructed? Science claims to be objective, but is that really the case? For example, how does the language of science determine what problems scientists study and how scientific work is funded? What influence do political issues have? Would science be different if more women enter the scientific fields? We will use several examples such as IQ testing, verbal and math abilities. By the end of the course you will be able to evaluate the validity of some scientific experiments.

4. What are the public policy dimensions of science and technology?

How can we prepare women for active participation as citizens and leaders in public debate about science?

Some class rules, notes:

- **Attendance will be taken from your comments submitted on index card at end of each class.**
- **Homework is due on the date listed on the syllabus.** All homework must be typed, double-spaced on 1 side of white 8 ½ x 11 paper with 1" margins at top, bottom and sides. Include your name, date, title of assignment, my name. ***Staple*** sheets together. Keep a copy for yourself. Lateness loses points.
- **Intellectual integrity:** All written work must be your original work (may include properly cited reference sources). Papers that do not acknowledge sources properly will receive a grade of F. If you submit another person's work as your own, you will fail the course, and, according to university regulations, I will report the plagiarism to the Chair of the English Department, the Dean of the College of Arts and Sciences and the Dean of Student Life.
- **Accommodations for disabilities:** If you require special accommodations -- such as extended time on exams-- for any disability, please speak to me so that we can arrange for suitable accommodations to help you achieve success in the course.
- **Preparation:** Come prepared to participate in class discussions each day. To prepare, read the assignment **at least** once, look up any words you do not know, make notes for your own understanding, and think of two discussion questions to ask in class.
- **Participation:** class is conducted in a seminar/ discussion format. Your participation is important to the class as a whole and to you. Grades reflect this emphasis.
- **Attendance:** Everyone is allowed 3 (three) absences. Each additional absence loses 1 point from your final grade. No exceptions. **There will be no make-ups of quizzes.**
- **Lateness:** Repeated lateness costs points.
- **Respect for others' views and opinions:** Please respect others in the classroom: respect and listen to all points of view; do not speak when others are speaking; **do not pack your books while others are speaking (INCLUDING the instructor!). Students who do not behave courteously toward others will be asked to leave the class.**

Please read this syllabus carefully and keep it in a safe and convenient place. It is your contract with me. If you have any questions, or if you lose it, please contact me ASAP.

The work in this course is complex and can be difficult. It's a good idea to seek help at the Academic Enhancement Center (AEC) in Roosevelt Hall. AEC tutors can answer questions, clarify concepts, check your understanding, and help you to study. You can make an appointment or walk in anytime during office hours -- Monday through Thursday from 10 am. to 10 pm, Friday from 10 am to 1 pm, and Sunday from 4 pm. to 8 pm. For a complete schedule -- including when tutors are available specifically for this class -- go to www.uri.edu/aec, call (401) 874-2367, or stop by the fourth floor in Roosevelt Hall.

Required books for the course:

Rachel Carson : The Writer at Work by Paul Brooks

Walking With the Great Apes : Jane Goodall, Dian Fossey, Birute Galdikas by Sy Montgomery

A package of 3x5 index cards. Please bring to class every session.



Recommended but not required:

Books and articles on Reserve in the Library:

“Biology of Beauty”

Boston Women’s Health collective, *Our Bodies, Ourselves*

“Breast Cancer” electronic reserve

Caplan and Caplan, *Thinking Critically about Research on Sex and Gender*

Carson, Rachel, “The Obligation to Endure” electronic reserve

Fausto-Sterling, “Five Sexes” photocopy of article

GAO Report *Gender Issues*

Gould, Stephen J. “Evolution” electronic reserve

“Love’s First Blush”

Math Packet

Rowland, Debran *The Boundaries of Her Body*

Small, Meredith F. *Our Babies, Ourselves*.

----- *Kids : How Biology and Culture Shape the Way We Raise Our Children* [RJ47 S475 2001](#)

Steingraber, Sandra *Living Downstream* [RC268.25 S74 1997](#)

Course Calendar: NOTE: Readings are due on the date listed on syllabus.

Wed Jan 19 Introduction to course; your science experiences; the scientific method. **Discuss observation project:** During the next two weeks spend 3 different periods of time (about ½ hour each) watching animals outdoors (near a bird feeder or a URI dumpster, on the beach, etc) --- not in a zoo. Keep a record of your observations: what animals? How many? Describe them. How long did you see them during the ½ hour you observed? Temperature, weather, time of day? Write up about 1-2 pages. **Due Feb. 11.**

Fri, Jan 21 **Women’s health.** Images of women’s bodies. What images do newspapers, print advertisements, and magazines convey? What impact do these images have? Are they related to women’s anorexia and bulimia or obsessions with body and diet? “Killing us softly III” video [VHS 003085](#) (34 min). **Plan of the magazine analysis. Divide into 5 groups.** Science Biography Virginia Apgar

Mon Jan 24 **Women primatologists READ Montgomery, *Great Apes: Introduction, three chapters on Jane Goodall (1 in each section).*** The women in this field revolutionized the study of primates. How did they do so? Jane Goodall in Montgomery. Video “Among the Wild Chimpanzees” VHS 002129 Part I. (59 min)

Wed Jan 26 READ: Dian Fossey (3 chapters) in Montgomery Do apes have language? Do they have culture? Video “Search for the Great Apes” VHS 002121. (60 min) Science Biog Caroline Herschel

Fri Jan 28 Primatologists: READ: Birute Galdikas (3 chapters) in Montgomery. Questions, discussion and quiz. Science Biog. Wangari Maathai (Assign 11 groups for the short report)

Mon Jan 31 **Women and Math** How do women compare with men in math skills? What is math anxiety and what can we do about it? How is math taught to students? READ: materials on reserve in Math packet

Wed, Feb 2 Description of final project. Divide into 8 groups for final projects. Time for discussion and group planning.

Fri Feb 4 Library session: how to find materials for your project

Mon, Feb 7 Environment READ: Brooks: Carson chapters 1, 2, 16-end (optional: read *Silent Spring*: chapters: A Fable for Tomorrow, Obligation to Endure, Elixirs of Death, Earth's Green Mantle, And No Birds Sing) video of Rachel Carson VHS 001458 **(60 min) view 45 min**

Was Rachel Carson the first environmentalist? What is the significance of her work?

Wed Feb 9 Rachel Carson continued; rest of video, discussion. Quiz on Rachel Carson.

Fri Feb 11 **Human Genome Project selections from the video Gattaca** VHS 002609 (107 min)
Observation project due.

Mon Feb 14 Valentine's Day special: the biology of beauty and sexual attraction. READ: "The Biology of Beauty," and "Love's first blush" on reserve (electronic reserve and in the reserve room in the library)
Write 1 paragraph reaction: biology of beauty vs. environment. How important is beauty vs. personality for a relationship?

Wed Feb 16 Video Gene Blues VHS [VHS 002749](#) (31 min)

Fri Feb 18 HGP--**Case studies: genetic and transgender issues. READ: "Five Sexes" on reserve in library.** Look up : eugenics. What does it mean? How has the theory of eugenics impacted women in the US? (Debran Rowland, *The boundaries of her body* has a discussion of this under sterilization, also look on the internet)

Mon Feb 21 NO CLASS

Tues Feb 22 CLASS MEETS The ethics of cloning [VHS 001454](#) (30 min) Science bio Annie Jump Cannon

Wed Feb 23 **Environment again: Look up your zipcode on www.scorecard.org Write a 1 page summary of what you found and your reaction.** *Erin Brockovich* [DVD 000074](#) (134 min)
Science Bio Rosalind Franklin (Did she deserve the Nobel Prize?)

Fri Feb 25 Erin Brockovich [DVD 000074](#) continued Science Bio Dorothy Hodgkin

Mon Feb 28 Woman Scientist Biog Barbara McClintock, Hypatia **Presentations of magazine analysis.**
Erin Brockovich continued.

Wed March 2 Woman Scientist Biog Lillian Gilbreth, Hildegard von Bingen
Our Bodies, Ourselves: the importance of *Our Bodies, Ourselves*—how did it come to be written? What was its impact for women's health? Diet and Exercise—current recommendations **Report Group I**

Proposal for action project due—hand in an outline or summary: 1 page

Fri, March 4 Woman Scientist Biog Maria Mitchell, Lady Augusta Byron (aka Ada Lovelace)
***Our bodies, ourselves* continued.**

Mon March 7 (SiBi Emily Roebling; Emmy Noether) In-class conferences: Progress report on final project: your starting bibliography, outline, list of questions, chart of group assignments—who's doing which piece. Some time for group work.

Wed March 9 (SiBi Mary E. Walker; Florence Sabin) Women's health---the medicalization of women's bodies.

Fri March 11 (SiBi Rosalyn Yalow; Williamina Fleming) Reports: Women's Health—aging

- Report: Osteoporosis—what is it? How diagnosed? Can it be prevented or treated? **Group II**
- Report: Menopause: disease or natural process? **Group II**

Spring Break March 14-20

Mon March 21 NO CLASS: Professor Stein at conference on aging

Wed Mar 23 Women's health reports continued

- Childbirth: midwives vs physicians **Group III**

Evening: Judy Norsigian, co-editor of *Our Bodies, Ourselves* White Hall Auditorium
Attendance required. Hand in an index card with your response or a question at the end of the talk.

Fri Mar 25 (SiBi Florence Seibert; Jewel Plummer Cobb)

- HRT--- Hormone Replacement Therapy—what is it? Should women use it? **Group IV**
- Women and cancer—where in US is highest incidence of breast cancer? What are some of the leading suspects for causes of breast cancer? (Read “Breast Cancer” on reserve)

Mon Mar 28 (SiBi Ida Hyde) Reports: **Women's Health: TOPICS**

- PMS-- causes, cures, questions READ: Caplan and Caplan, pp. 78-82 **Group V**

Wed Mar 30 (SiBi Florence Bascom; Linda B. Buck) **Research on Sex and Gender** What kinds of questions have scientists asked about sex and gender? How have the questions shaped their research? What other kinds of questions ought we to ask? Would science change if there were more women scientists
Caplan and Caplan pp. 1-10 Group VI

Fri April 1 (SiBi Eugenie Clark, Grace Hopper;) 21-30 How and why are scientists biased? Can we avoid such bias? What is Social Darwinism? What is sociobiology? What are some of the errors that may affect scientific research? **Caplan pp. 11-20 Group VII**

Mon April 4 (SiBi Gertrude Elion): Studies of men's aggression Caplan and Caplan pp. 59-68 **Group VIII**
(possibly a segment of Michael Moore's *Bowling for Columbine*) **First draft of final project due**

Wed April 6 (SiBi Lise Meitner, Mae Jemison) Bill Moyers NOW video

Fri April 8 (SiBi Gerty Cori, Sally Ride) video Mme. Curie

Mon April 11 (SiBi Ellen S. Richards) video Mme Curie

Wed Apr 13 (SiBi Chien -Shiung Wu) Video Mme Curie

Fri Apr 15 (SiBi Nettie Stevens) Group discussions, evaluation of course

Mon Apr 18 (SiBi Maria Goeppert Mayer) **Scrapbook due**

Wed Apr 20 (SiBi Rita Levi-Montalcini) **Presentations of final project: Group I**

4/ 20 Group I	4/25 Group II	4/27 Group III	4/29 Group IV	5/2 Group V, VI
5/4 Group VII	5/6 Group VIII			

Mon May 9 Last day of class Report on action projects

Assignments:

Required work for the course:

- A. Present a short (about 2 paragraphs) biography of a woman scientist. 5% of grade
Include birth/ death, achievements, field, (may include 1 or 2 items of special interest). The meat of this report is the scientist's achievements. Explain her achievements as clearly as you can. This is a 2-3 minute oral presentation; no need to hand in written report.
- B. Present to the class: 5 minutes: analysis of a current magazine. **Due Feb 28** Group; 10% This is a 5-minute oral presentation; no need to hand in written report.
- C. Classwork, quizzes, reports, home work assignments, class participation, 10%
- D. Short report on women's health—**due in March**—group; 1-2 page written report 10%
Group presents 5—10 minute report to class; hand in report.
- E. Scrapbook -- Individual project 10% **Due April 18**
- F. Report on Judy Norsigian lecture or substitute assignment 5%**
- G. Bibliography 10% of grade **Due with final project**
- H. Final project 30% of grade **DUE as assigned**
Present an 8-12 minute report to class and hand in complete written project as listed below.
- I. Action project 10% **Proposal due March 2**, according to guidelines; 1 page report and presentation to the class--**due May 9**

Some ideas for action projects:

- organize a beach or campus clean-up
- work on the "Celebration of natural body types" event
- help with recycling on campus or in a place you work
- make and distribute flyers about an environmental issue
- write letters to a newspaper, a government agency and/or a company about some science policy or problem

Magazine Analysis. Due Feb 28 Choose a magazine to review. Find images of men and women. Divide up the topics: ads, articles, fiction, other. We will discuss how to analyze the images. Include sample ads (mounted on paper or photocopied).. Count ads, articles, describe other features. What products do the ads present? Analyze the images of men and women in the ads and the articles. (What are they wearing? What are they doing? What kinds of people do they seem to be: jobs, ages, social status, appearance?) Who is the audience? What messages does it convey about men and women?

Scrapbook. April 18 Science is very much in the news! Keep a scrapbook of recent articles in newspapers and magazines about women and science (Articles must be published between January 2004 and April 2005.) **Must have at least 5 articles.** For each article, list date, source, title, author (if known). Summarize the main points of each article in 1-5 sentences. Write your comments about each article (why is it important? What issues does it raise?) in 5-10 sentences.

Good sources of science articles: Tuesday *NY Times* Science section, *Discover* magazine, daily newspapers, science sections of *Time* or *Newsweek*

Web sites include: <http://exn.ca/> <http://www.nytimes.com/yr/mo/day/national/index-science.html>

Annotated Bibliography. Compile an annotated bibliography of books and articles related to your final project. Photocopy the title page (and any 3 pages that you used for your paper) of each book and the first page of each article. Print any internet sources. **Due with your final project**

- Must include at least 5 sources
- author, title, date, place of publication, (according to standard citation format, either MLA or APA) list # of pages, and any special features (index, bibliography, tables, appendices, diagrams, etc)
- 1-5 sentence summary of each source
- your discussion of each source. What are its strong points, its weaknesses? (3-6 sentences)
- How useful is it for your project? **Place an * next to the source that turned out to be the most useful.** (1-3 sentences)

Bibliography will be graded according to this system:

5 sources 10%	Cited correctly 10%	Photocopies 10%	Summary 20%	Quality of sources 20%	Your discussion 30%
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Final Project. This may be done in a group of up to 4 students. (A first draft is due April 4 with a typed draft of each of these items). It will include:

- your bibliography
- report of 3-8 pages. The report will include:
- statement of the problem or question you investigated.
- What you learned about the problem or question. Implications for women and/or science
- your first draft
- complete in-text citations (author's name and page # in parentheses in text) for **each** use of each source ---whether directly quoted, paraphrased or summarized
- a non-print component related to your project. This could be a chart, a picture, a power point presentation, a video or audio tape, a skit, a game, a quiz for the class.

Group projects will be graded according to the following system:

Logic 10	Accuracy 15	Clarity 15	Coverage 10	*Grammar, spelling 5	Organization 10
Creativity 10	Presentation 10	Group evaluation 5	Proper use of citations 10		

- If the project is only an oral one, these 5 points will be added to the presentation grade.

Evaluation of group members for projects: You have worked in groups. How did the other people in your group contribute to the success of the project? When you hand in reports, each group member should rate the others. Hand in a sheet of paper on which you list all the group members and rate them on a scale of 1-5 in each category. **One is lowest; 5 is highest.** For example: Member A is very cooperative and gets a 5; B is resistant and rates a 2.

Members	A	B	C	D
Cooperation				
Creativity				
Communication				
Effort				

