

HISTORY OF SCIENCE 350
WOMEN AND SCIENCE IN WESTERN HISTORY
JUNE 18 – AUGUST 12, 2001

Monday – Thursday, 1:10 – 2:25 p.m.
Room 4322, Social Sciences Building

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Office Hours: Monday, Thursday 2:30-3:30 p.m., 7142 Social Sciences

Course Description:

This course examines complex interactions of gender, science, and society over time. The course begins in Greek antiquity, but focuses on issues pertaining to women and science in the United States in the 19th and 20th centuries. The course analyzes scientific and social ideas about women and their bodies, documents and examines women's pursuit of scientific careers, and considers women's responses to the scientific ideas of their times.

Student Responsibilities:

Students are expected to complete assigned readings **before** each class, as discussion of these reading will be a major component of the course. In addition to a midterm and final exam, short in-class writing assignments based on the required readings should be expected. Students are also responsible for completing three library assignments. Every two weeks, the fourth session of each class will be devoted to a library workshop in which students will learn how to search for and find documents relating to women and science. Using skills acquired, students will complete three short assignments.

Required Texts:

- Reading Packet, **Available at Student Print, Memorial Union**
- Sally Gregory Kohlstedt, *History of Women in the Sciences: Readings from ISIS*, (Chicago: University of Chicago Press, 1999). **Available at A Room of One's Own**, 307 West Johnson Street (Johnson near State Street)
- Margaret Rossiter, *Women Scientists in America: Struggles and Strategies to 1940*, (Baltimore: Johns Hopkins University Press, 1984). **Available at A Room of One's Own**, 307 West Johnson Street (Johnson near State Street)

In this syllabus, these required texts will be referred to as "Reader," "Kohlstedt, ISIS," and "Rossiter to 1940"

Grading Guidelines:

Class Participation: 20%
Midterm Examination: 20%

Written Assignments (3): 30%
Final Examination: 30%

Please note that class participation accounts for a significant portion of your grade. The class participation grade includes both oral contributions to classroom discussions and in-class written responses to assigned readings.

Class participation grades will be assigned as follows:

B: Attends regularly, listens actively and appears interested in classroom discussions; participates fairly regularly in classroom discussions; in-class written assignments show evidence of having read course materials.

AB: Attends regularly, listens actively and shows interest in classroom discussions; regularly participates in classroom discussions in ways which demonstrate critical analysis of course materials; in-class written assignments show evidence of having read and critically analyzed course materials.

A: Attends regularly, listens actively and shows interest in classroom discussion; frequently participates in classroom discussions in ways which demonstrate critical analysis of and original thinking about course materials; in-class written assignments show evidence of having read, critically analyzed, and developed original ideas about course materials.

BC: Attends fairly regularly; listens but does not always seem engaged in classroom discussions; infrequently contributes to classroom discussion; in-class written assignments do not always show evidence of having read course material.

C: Attendance is irregular; does not always seem engaged in classroom discussions; rarely contributes to classroom discussion; in-class written assignments do not show evidence of having read course material.

D: Attendance is very irregular; does not seem interested in classroom discussion; hardly ever contributes to classroom discussion; in-class written assignments are missed or do not show evidence of having read course materials.

F: Major problems with attendance; does not seem engaged in classroom discussion; never contributes to classroom discussion; in-class written assignments are missed or do not show evidence of having read course materials.

Similarly, for exams and written assignments:

B: Work meets expectations by showing mastery of course materials, both reading and discussion.

AB: Work meets and somewhat exceeds expectations by showing mastery and critical analysis of course materials. Also exhibits ability to integrate various readings and discussions.

A: Work meets and exceeds expectations by showing mastery and critical analysis of course materials. Also exhibits ability to integrate various readings and discussions and gives evidence of original thinking about course material.

BC: Work exhibits some misunderstanding/lack of understanding/acquaintance with course materials.

C: Work exhibits serious misunderstanding/lack of understanding/acquaintance with course materials. Frequent absences may be a contributing factor.

D: Work exhibits major misunderstanding/lack of understanding/acquaintance with course materials. Lack of effort and frequent absences may also be responsible.

F: Work exhibits total misunderstanding/lack of understanding/acquaintance with course materials. Lack of effort and frequent absences may also be responsible.

HS 350- WOMEN AND SCIENCE IN WESTERN HISTORY COURSE SCHEDULE

WEEK I: Scientific Ideas about Women and their Bodies until the Mid-nineteenth Century

- Monday, June 18:** Course Introduction
Tuesday, June 19: Ancient Ideas About Women and their bodies
Wednesday, June 20: Ideas about Women and their bodies in the Middle Ages
Thursday, June 21: Scientific ideas about Women in the Renaissance and Beyond

WEEK II: Women in Science until the Mid-nineteenth Century

- Monday, June 25:** Women Scientists in the Ancient and Medieval Worlds
Tuesday, June 26: Women Scientists in the Renaissance and Beyond
Wednesday, June 27: Women Scientists in the Renaissance and Beyond
Thursday, June 28: LIBRARY WORKSHOP – Meeting place to be announced
BIOGRAPHY ASSIGNMENT – due Monday, July 2

WEEK III: Scientific Ideas about Women from the mid-19th to early 20th centuries

- Monday, July 2:** Ideas about women, menstruation, and education
Tuesday, July 3: Ideas about women and intellect
Wednesday, July 4: **NO CLASS**
Thursday, July 5: Ideas about gender and race

WEEK IV: Women Scientists from the mid-19th to early 20th centuries

- Monday, July 9:** Women and Botany
Field Trip – meet at Memorial Library Special Collections
Tuesday, July 10: Women Learning Science and Teaching Science
Wednesday, July 11: University training for women scientists & women's work in science
Thursday, July 12: **MIDTERM EXAMINATION**
ASSIGNMENT: Popular Literature and Madame Curie – DUE MONDAY, JULY 16

WEEK V: Women Scientists from the mid-19th to early 20th centuries

- Monday, July 16:** Public Images of Women in Science
Tuesday, July 17: Women Scientists employed in academia
Wednesday, July 18: Other employment for Women Scientists
Thursday, July 19: Recognition/lack of recognition for women scientists

WEEK VI: Women Scientists in the 20th century

- Monday, July 23:** Women scientists in academia: Home Economics
Guest Speaker: Rima Apple, Ph.D.
- Tuesday, July 24:** Women scientists in academia
- Wednesday, July 25:** Recognition/lack of recognition for women scientists
- Thursday, July 26:** Recognized women of science
- ARCHIVAL WORKSHOP – meeting place to be announced**
- ASSIGNMENT: Report on Archival Findings – DUE MONDAY, JULY 30**

WEEK VII: Scientific Ideas about women in the 20th-century

- Monday, July 30:** Reproduction and sexual selection
- Tuesday, July 31:** Primatology
- Wednesday, Aug. 1:** Research on male/female cognitive differences
- Thursday, August 2:** Ideas about women's bodies/women's health

WEEK VIII: Women and Science in Contemporary Society

- Monday, August 6:** Women in Science and Engineering
Guest Speaker, Caitilyn Allen, Ph.D.
- Tuesday, August 7:** Women in Science at the University of Wisconsin
- Wednesday, Aug. 8:** Role of Women in Science
- Thursday, August 9:** Review and Conclusion

**FINAL EXAMINATION – Take home essay – DUE SUNDAY, Aug 12,
5pm or SOONER**

HS 350 – WOMEN AND SCIENCE IN WESTERN HISTORY COURSE SYLLABUS

WEEK I: Scientific Ideas about women and their bodies until the mid-19th century

Monday, June 18: Course Introduction

In Class reading:

- Londa Schiebinger, "Hypatia's Heritage"

Tuesday, June 19: Ancient Ideas About Women and their bodies

- Reader, pp. 1-4: Aristotle, "The Female role in generation"
- Reader, pp. 5-8: Hippocrates, "Intercourse conception and pregnancy"
- Reader, pp. 8-11: Galen, "Comparison of male and female anatomy"
- Reader, pp. 12-34: Lesley Dean-Jones, "Medicine: The 'Proof' of Anatomy"

Wednesday, June 20: Ideas about Women and their bodies in the Middle Ages

- Reader, pp. 35-59: Cadden, "It Takes All Kinds: Sexuality and Gender Differences in Hildegard of Bingen's Book of Compound Medicine"

Thursday, June 21: Scientific Ideas about Women in the Renaissance and Beyond

- Reader, pp. 60-71: Estelle Cohen, "'What the Women at All Times Would Laugh At': Redefining Equality and Difference, circa 1660 – 1760"
- Reader, pp. 72-88: Londa Schiebinger, "Competing Cosmologies: Locating Sex and Gender in the Natural Order"
- Reader, pp. 89-116: Londa Schiebinger, "More than Skin Deep: The Scientific Search for Sexual Difference"

WEEK II: Women in Science until the mid-19th century

Monday, June 25: Women Scientists in the Ancient and Medieval Worlds

- Reader, pp. 117-118: "Female Medical practitioners"
- Reader, pp. 118-119: Soranus, "Midwives – Qualities and training"
- Reader, pp. 120-135: Victoria Sweet, "Hildegard of Bingen and the Greening of Medieval Medicine,"
- Reader, pp. 136-139: Michael H. Shank, "A Female University Student in Late Medieval Krakow,"

Tuesday, June 26: Women Scientists in the Renaissance and beyond

- Reader, pp. 139-155: Londa Schiebinger, "Institutional Landscapes"
- Kohlstedt, ISIS, pp.: 39 – 65: Londa Schiebinger, "Maria Winkelmann at the Berlin Academy"

Wednesday, June 27: Women Scientists in the Renaissance and beyond

- Reader, pp. 156-181: Londa Schiebinger, "Noble Networks"
- Kohlstedt, ISIS, pp. 66 – 95: Paula Findlen, "Science as a Career in Enlightenment Italy: The Strategies of Laura Bassi"

Thursday, June 28: LIBRARY WORKSHOP

BIOGRAPHY ASSIGNMENT – DUE MONDAY, JULY 2:

Some suggestions: Hypatia, Trotula, Hildegard of Bingen, Madame de Coudray, Emilie de Chatelet, Margaret Cavendish

**WEEK III: Women & Science from the mid 19th to early 20th centuries
– Scientific ideas about women**

Monday, July 2: Ideas about women, menstruation, and education

- Reader, pp. 182-204: Carroll Smith-Rosenberg and Charles Rosenberg, *The Female Animal: Medical and Biological Views of Women and her Role in 19th century America*,
- Reader, pp. 205-220: Edward H. Clark, *Sex in Education, or a Fair Chance for Girls* - selections
- Reader, pp. 221-230: Mary Putnam Jacobi, *"The question of rest for women during menstruation"*

Tuesday, July 3: Ideas about Women and intellect

- Reader, pp. 231-240: Elizabeth Fee, "Nineteenth-Century Craniology: The Study of the Female Skull"
- Reader, pp. 241-247: Darwin, *Descent of Man* – selections, 1872
- Reader, pp. 248-256: Louise Michele Newman, "The Problem of Biological Determinism"
- Reader, pp. 256-260: Herbert Spencer, "Psychology of the Sexes," November 1873
- Reader, pp. 260-264: Francis Emily White, M.D. "Women's Place in Nature," January 1875
- Reader, pp. 264-267: Miss M.A. Hardaker, "Science and the Woman Question," March 1882
- Reader, pp. 267-271: Nina Morais, "A Reply to Miss Hardaker on the Woman Question," May 1882
- Reader, pp. 271-274: Mary T. Bissell, M.D., "Emotions versus health in Women,"
- Reader, pp. 275-282: Rosalind Rosenberg, "In Search of Woman's Nature, 1850-1920"

Wednesday, July 4: NO CLASS

Thursday, July 5: Ideas about gender and race

- Kohlstedt, ISIS, pp. 269 – 285: Nancy Leys Stepan, "Race and Gender: The Role of Analogy in Science"
- **another article to be distributed in class**

WEEK IV: Women & Science from the mid 19th to early 20th centuries – Women Scientists

Monday, July 9: Women and Botany

FIELD TRIP – MEMORIAL LIBRARY SPECIAL COLLECTIONS

- Reader, pp. 283-288: Ann Schteir, "Gender and 'Modern' Botany in Victorian England"
- Reader, pp. 289-302: Nancy G. Slack, "Nineteenth-Century American Women Botanists"

Tuesday, July 10: Women Learning Science and Teaching Science

- Kohlstedt, ISIS, pp. 169 – 190: Sally Gregory Kohlstedt, "Parlors, Primers, and Public Schooling: Education for Science in Nineteenth-Century America"
- Rossiter - I, Chapter 1, pp.
- Kohlstedt, ISIS, pp. 153 – 168: M. Susan Lindee, "The American Career of Jane Marcet's *Conversations of Chemistry*, 1806 – 1853"

Wednesday, July 11: University training for women scientists and women's work in science

- Rossiter - I, pp: Chapter 2 and 3
- Kohlstedt, ISIS, pp. 201 – 219: Anne Hibner Koblitz, "Science, Women and the Russian Intelligentsia"
- Reader, pp. 303-312: Sally Gregory Kohlstedt, "Maria Mitchell and the Advancement of Women in Science"
- Reader, pp. 313-322: Anne Hibner Koblitz, "Career and Home Life in the 1880s: The Choices of Mathematician Sofia Kovalevskaja"
- Kohlstedt, ISIS, pp. 221 – 232: Peggy Aldrich Kidwell, "Women Astronomers in Britain, 1780 - 1930"
- Kohlstedt, ISIS, pp. 235 – 268: Marsha L. Richmond, "A Lab of One's Own"

Thursday, July 12: MIDTERM EXAMINATION

ASSIGNMENT: POPULAR Literature and Madame Curie – DUE MONDAY, JULY 15

WEEK V: Women & Science from the mid 19th to early 20th centuries – Women Scientists

Monday, July 16: Public Images of Women in Science

- Rossiter - I, Chaps 4, 5
- Reader, pp. 322-334: Helena M. Pycior, "Marie Curie's 'Anti-natural Path': Time Only for Science and Family"
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Tuesday, July 17: Women Scientists employed in Academia

- Rossiter - I, Chaps 6, 7

Wednesday, July 18: Other Employment for Women Scientists

- Rossiter - I, Chaps 8, 9
- Reader, pp. 335-355: Martha Moore Trescott, "Women in the Intellectual Development of Engineering"

Thursday, July 19: Recognition/lack of recognition for women scientists

- Rossiter - I, Chaps 10, 11, Concl.
- Kohlstedt, ISIS, pp. 337 – 346: Stephen G. Brush, "Nettie M. Stevens and the Discovery of Sex Determination by Chromosomes"

WEEK VI: Women and Science in the 20th century – Women Scientists

Monday, July 23: Women and Science in Academia: Home Economics

GUEST SPEAKER: RIMA APPLE,

- Reader, pp. 356-372: Margaret Rossiter, "Protecting Home Economics, the Women's Field"
- To be distributed: Stage & Vincenti, "Rethinking Home Economics"

Tuesday, July 24: Women scientists in Academia

- Reader, pp. 373-389: Margaret Rossiter, "Faculty at Major Universities"
- Reader, pp. 390-407: Margaret Rossiter, "Resentful Research Associates"
- Reader, pp. 408-420: Aimee Sands, "Never Meant to Survive: A Black Woman's Journey, An Interview with Evelyn Hammonds"

Wednesday, July 25: Recognition/lack of recognition for women scientist

- Reader, pp. 421-444: Margaret Rossiter, "Invisibility and Underrecognition"

Thursday, July 26: Recognized women of science

- Each student will read a biographical article on a Nobel Prize winning women scientist. Articles will be distributed in class.

ARCHIVAL WORKSHOP

ASSIGNMENT – REPORT ON ARCHIVAL FINDINGS DUE Monday July 30th

WEEK VII: Women and Science in the 20th – century – Scientific Ideas about Women

Monday, July 30: Continued influence of assumed gender roles on scientific theory/explanation – Reproduction and sexual selection

- Reader, pp. 445-453: Emily Martin, "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles"
- "Reader, pp. 454-468: Sarah Blaffer Hrdy, "Empathy, Polyandry, and the Myth of the Coy Female"

Tuesday, July 31: Continued influence of assumed gender roles on scientific theory/explanation – Primatology

- Reader, pp. 469-482: Susan Sperling, "Baboons with Briefcases: Feminism, Functionalism, and Sociobiology in the Evolution of Primate Gender"
- Reader, pp. 483-504: Donna Haraway, "Primatology is Politics by Other Means,"

Wednesday, Aug. 1: Continued influence of assumed gender roles on scientific theory/explanation – Research on male/female cognitive differences

- Reader, pp. 505-513: Judith Genova, "Women and the Mismeasure of Thought"
- Reader, pp. 514-523: Janet Shibley Hyde, "Meta-Analysis and the Psychology of Gender Differences"

Thursday, August 2: Ideas about women's bodies/women's health

- Reader, pp. 534-535: Jacquelyn N. Zita, "The Premenstrual Syndrome: 'Dis-easing the Female Cycle'"

WEEK VIII: WOMEN AND SCIENCE IN COMTEMPORARY SOCIETY

Monday, August 6:

GUEST SPEAKER - Caitilyn Allen, Ph.D., Women in Science and Engineering

- Reader, pp. 536-551: Stephen G. Brush, "Women in Science and Engineering"
- Reader, pp. 552-558: Caitilyn Allen, "Wiser Women: Fostering Undergraduate Success in Science with a Residential Academic Program"

Tuesday, August 7: Women in Science at the Univ. of Wisconsin

- Reading to be distributed

Wednesday, Aug. 8: Role of women in science

- Reading to be distributed

Thursday, August. 9: Role of women in science

- Reading to be distributed

HS 350: WOMEN AND SCIENCE IN WESTERN HISTORY

READING PACKET: CONTENTS

Page	Reading
1-4	Aristotle, "The Female role in generation," in <i>On the Generation of Animals</i> , (Athens, 4 th century B.C.), translated and published in Mary R. Lefkowitz and Maureen B. Fant, <i>Women's Life in Greece & Rome: A source book in Translation</i> , 2 nd edition, (Baltimore, MD: The Johns Hopkins University Press, 1982,1992), pp. 226 – 229.
5-8	Hippocrates, "Intercourse conception and pregnancy," in <i>On the Generating Seed and the Nature of the Child</i> , (Cos, 4 th century B.C.), translated and published in Mary R. Lefkowitz and Maureen B. Fant, <i>Women's Life in Greece & Rome: A source book in Translation</i> , 2 nd edition, (Baltimore, MD: The Johns Hopkins University Press, 1982,1992), pp. 230 – 243.
8-11	Galen, "Comparison of male and female anatomy," in <i>On the Usefulness of the Parts of the Body</i> , (Pergamum, 2 nd century AD), translated and published in Mary R. Lefkowitz and Maureen B. Fant, <i>Women's Life in Greece & Rome: A source book in Translation</i> , 2 nd edition, (Baltimore, MD: The Johns Hopkins University Press, 1982,1992), pp. 243 – 246.
12-34	Lesley Dean-Jones, "Medicine: The 'Proof' of Anatomy," in Elaine Fantham, et. al., <i>Women in the Classical World: Image and Text</i> , (New York: Oxford University Press, 1994), pp. 183 – 205.
35-59	Joan Cadden, "It Takes All Kinds: Sexuality and Gender Differences in Hildegard of Bingen's Book of Compound Medicine," <i>Traditio</i> 40(1984): 149-74.
60-71	Estelle Cohen, "'What the Women at All Times Would Laugh At': Redefining Equality and Difference, circa 1660 – 1760" in Sally Gregory Kohlstedt and Helen Longino, eds., <i>Women, Gender, and Science: New Directions</i> , (Chicago: University of Chicago Press, 1997), pp. 121-143
72-88	Londa Schiebinger, "Competing Cosmologies: Locating Sex and Gender in the Natural Order" in Londa Schiebinger, <i>The Mind Has No Sex?: Women in the Origins of Modern Science</i> , (Cambridge, MA: Harvard University Press, 1989) pp. 160-188.

- 89-116 Londa Schiebinger, "More than Skin Deep: The Scientific Search for Sexual Difference," in Londa Schiebinger, *The Mind Has No Sex?: Women in the Origins of Modern Science*, (Cambridge, MA: Harvard University Press, 1989) pp. 189 – 213.
- 117-118 "Female medical practitioners," in Mary R. Lefkowitz and Maureen B. Fant, *Women's Life in Greece & Rome: A source book in Translation*, 2nd edition, (Baltimore, MD: The Johns Hopkins University Press, 1982,1992), pp. 264 – 265.
- 118-119 Soranus, "Midwives – Qualities and training" in Mary R. Lefkowitz and Maureen B. Fant, *Women's Life in Greece & Rome: A source book in Translation*, 2nd edition, (Baltimore, MD: The Johns Hopkins University Press, 1982,1992), pp. 265 - 266.
- 120-135 Victoria Sweet, "Hildegard of Bingen and the Greening of Medieval Medicine," *Bulletin of the History of Medicine*, 73(1999): 381-403.
- 136-139 Michael H. Shank, "A Female University Student in Late Medieval Krakow," in Judith M. Bennett, et. al, eds., *Sisters and Workers in the Middle Ages*, (Chicago: University of Chicago Press, 1989)
- 139-155 Londa Schiebinger, "Institutional Landscapes," in Londa Schiebinger, *The Mind Has No Sex?: Women in the Origins of Modern Science*, (Cambridge, MA: Harvard University Press, 1989) pp. 10 – 36.
- 156-181 Londa Schiebinger, "Noble Networks" in in Londa Schiebinger, *The Mind Has No Sex?: Women in the Origins of Modern Science*, (Cambridge, MA: Harvard University Press, 1989) pp. 37 – 65.
- 182-204 Caroll Smith-Rosenberg and Charles Rosenberg, *The Female Animal: Medical and Biological Views of Women and her Role in 19th century America*, in Judith Leavitt, ed., *Women and Health in America*, (Madison, WI: University of Wisconsin Press, 1999)
- 205-220 Edward H. Clark, *Sex in Education, or a Fair Chance for Girls*, (1873).
- 221-230 Mary Putnam Jacobi, *The question of rest for women during menstruation*, (NY: G.P. Putnam's sons, 1877).
- 231-240 Elizabeth Fee, "Nineteenth-Century Craniology: The Study of the Female Skull," *Bulletin of the History of Medicine*, 53(1979): 415-433.

- 313-322 Ann Hibner Koblitz, "Career and Home Life in the 1880s: The Chices of Mathematician Sofia Kovalevskaja," in Pnina G. Abir-Am and Dorinda Outram, *Uneasy Careers and Intimate Lives: Women in Science: 1789 – 1979*, (New Brunswick: Rutgers University Press, 1987). pp. 172 – 190.
- 322-334 Helena M. Pycior, "Marie Curie's 'Anti-natural Path': Time Only for Science and Family," in Pnina G. Abir-Am and Dorinda Outram, *Uneasy Careers and Intimate Lives: Women in Science: 1789 – 1979*, (New Brunswick: Rutgers University Press, 1987). pp. 191-215.
- 335-355 Martha Moore Trescott, "Women in the Intellectual Development of Engineering," in G. Kass-Simon and Patricia Farnes, *Women of Science: Righting the Record*, (Bloomington, IN: Indiana University Press, 1990), pp. 156 – 187.
- 356-372 Margaret Rossiter, "Protecting Home Economics, the Women's Field," *Women Scientists in America: Before Affirmative Action, 1940-1972*, (Baltimore: Johns Hopkins University Press, 1995), pp. 165- 185.
- 373-389 Margaret Rossiter, "Faculty at Major Universities: The Antinepotism Rules and the Grateful Few," *Women Scientists in America: Before Affirmative Action, 1940-1972*, (Baltimore: Johns Hopkins University Press, 1995), pp. 122-148.
- 390-407 Margaret Rossiter, "Resentful Research Associates: Marriage and Marginality," *Women Scientists in America: Before Affirmative Action, 1940-1972*, (Baltimore: Johns Hopkins University Press, 1995), pp. 150-164.
- 408-420 Aimee Sands, "Never Meant to Survive: A Black Women's Journey, An Interview with Evelyn Hammonds," in Sandra Harding, ed., *The 'Racial' Economy of Science*, (Bloomington, IN: Indiana University Press, 1993), pp. 239-248.
- 421-444 Margaret Rossiter, "Invisibility and Underrecognition: Less and Less of More and More," *Women Scientists in America: Before Affirmative Action, 1940-1972*, (Baltimore: Johns Hopkins University Press, 1995), pp. 304-332.