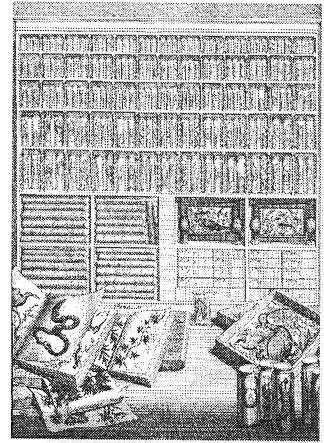


HISTORY OF SCIENCE 350 (spring 2007)
Department of Special Collections
984 Memorial Library
Monday 3:30-5:30 p.m.



History of the scientific book & journal

Using as examples rare books in Special Collections and a variety of other printed and electronic resources, this course explores the printing and publication of science from the late 15th century to the present, with attention to cultural, economic, social, esthetic, and technological factors affecting the dissemination of scientific ideas. The reading list draws from history of science and technology, history of the book, and cultural history. We can adjust the material to accommodate special interests.

R. Rider ▪ 262-2809 (office) ▪ 347-2251 (cell) ▪ rrider@library.wisc.edu
For urgent matters, please call my cell phone rather than send e-mail.
Office hours: Tuesday 1-2 or by appointment ▪ 990 Memorial Library

Expectations

The readings and assignments specified in this schedule are required; see the bibliography for details on readings. You are also expected to attend and participate in class. For each writing/presentation assignment listed in the schedule, you will receive a separate description of the assignment. Lists A-E as mentioned in the schedule will also be supplied separately.

All assigned readings for the course are to be completed before class for the week in question. Unless a choice is indicated, all readings listed are required. Discussions during class will give you an opportunity to discuss and understand the readings; they will also carry considerable weight in your final grade. Please prepare for them. See *Written & oral assignments* below.

The Learn@UW site for this course will contain announcements (called "News" in Learn@UW), links to other useful Web sites, copies of handouts distributed also in paper form, and selected PowerPoint slides.

Assigned readings (journal articles, chapters from books) are available in several forms and places.

- Required readings for week 2 will be available on Learn@UW under "Readings."
- Most required readings for the course will be available as e-reserves through MyUW. However, expect some delay in availability of e-reserves at the beginning of term due to the large volume of reserves handled by the College Library office.
- Some readings are available in electronic form (as either page images or full electronic text) through various of the Library's licensed online journals or other resources.
- Some readings will be available only in Special Collections (open 9-5 weekdays).

Graduate students may expect additional reading assignments.

Written & oral assignments; grading

For everyone:

You are expected to attend class and participate in discussions. Please turn in all written assignments on paper (not by e-mail). There will be penalties for turning in written assignments after the due date.

No plagiarism. No papers recycled from other classes.

If you have any questions about the assignments, please discuss with the instructor well before the assignment is due (not the night before).

For undergraduates:

- Each of you will be expected to lead a short discussion of the assigned reading(s) once during the semester. Based on enrollment, you may be part of a small team leading the discussion rather than doing so solo.
- You will also prepare three short written exercises or papers due on 2/19, 3/19, 4/23 — see the schedule below. The first is a short written exercise based on articles in the early *Philosophical transactions* of the Royal Society; the second is a short paper describing the use of illustrations in a 19th-century book; the third is a short description of another scientific book or journal chosen from an extensive list. Details on these assignments later.
- The take-home final is due on 5/9.

Grades for undergraduates will be weighted as follows: 10% for the first written exercise; 20% for the second paper; 20% for the third paper; 20% for discussion and for leading discussion; 30% for the take-home final.

If you intend honors enrollment, please confer with the instructor by 1/29.

For all graduate students (regardless of major):

- Each of you will be expected to lead a short discussion of the assigned readings once during the semester. Based on enrollment, you may be part of a small team leading the discussion rather than doing so solo.
- You will also prepare three short written exercises or papers due on 2/19, 3/19, 4/23 — see the schedule below. The first is a short written exercise based on articles in the early *Philosophical transactions* of the Royal Society; the second is a short paper describing the use of illustrations in a 19th-century book; the third is a short description of another scientific book or journal chosen from an extensive list. Details on these assignments later.
- Due on 5/9: either the take-home final (grad student version) or a 15-page essay or research paper, on a topic chosen well in advance and in consultation with the instructor. If you elect the 15-page essay option, your paper should include treatment of one or more primary sources as well as relevant secondary literature.

Grades for all graduate students will be weighted as follows: 10% for the first written exercise; 20% for the second paper; 20% for the third paper; 20% for discussion and for leading discussion; 30% for the take-home final.

Schedule

All assigned readings for the course are to be completed before the discussion section for the week in question — i.e., the second week's assignment is to be completed **before class** on 1/29. Unless a choice is indicated, all readings listed are required. Bibliographic details and library locations for the reading assignments follow the schedule.

Week	Date	Topics	Readings — each student will lead discussion of at least 1 assigned reading (schedule to be determined)	Assignment
1	1/22	Technological transitions		
2	1/29	Discovery and print	Twyman, ch. 1; Reeds	
3	2/5	The Scientific Revolution: Looking at a 16 th - or 17 th -century book	Nummedal and Findlen; Lowood; Gingerich	
4	2/12	A new institutional base for science in print. Also short demonstration at Silver Buckle Press.	Bazerman, ch. 3, 5; Gross, pp. 17-23. No student-led discussion on 2/12.	
5	2/19	<i>Philosophical transactions</i> of the Royal Society of London	Article/chapter on early journals chosen from List A. No student-led discussion on 2/19,	During class: Structured examination of an issue of the <i>Philosophical transactions</i> —paper exercise to be turned in at end of class.
6	2/26	Matters of credibility; a quickening pace	Houghton, ch. 1-4	
7	3/5	Picturing nature	Gascoigne 5a-6e, 9a-10e; Knight, ch. 2; Blum, introduction	Choose illustrated scientific book from List B for paper due on 3/19
8	3/12	Images of nature: New techniques, new practices	Sheets-Pyenson, "The effect of changes"; plus article on images of nature chosen from List C	
9	3/19	Examples of images of nature		Short paper based on illustration(s) in book chosen from List B
10	3/26	Popularization	Secord, ch. 1; Lightman	
11	4/2	SPRING BREAK		
12	4/9	Specialization	Day, ch. 3, 18; skim Montgomery, ch. 7.	Choose scientific book or journal for paper due 4/23
13	4/16	New scientific journals	Meadows, "Access to the results of scientific research"; Hufbauer; article on scientific journals chosen from List D	
14	4/23	Assessing value; issues of ownership of scientific information		Short paper due, describing book or journal relevant to class themes
15	4/30	New models for scientific communication	Guédon, esp. ch. 7; Tenopir and King; article on new models of scientific communication chosen from List E; skim Barschall Web site	Take-home final distributed.
16	5/7	Overview, with examples		
	5/9			FINAL DUE AT 5 P.M. (note date and time). Your choice of take-home final or final paper (if a final paper, subject requires prior approval).

Bibliography

This selected bibliography, divided into sections that match the schedule, addresses issues of the look and feel of scientific books and journals, their content, their production and distribution, and connections to the scientific enterprise, as well as prospects for the future. For specific assignments, see the schedule. In some cases, you will be asked to choose among several readings on separate lists to be supplied later. Thus, some required readings for the course are not included in this bibliography. I'll be happy to suggest other readings as well.

Books vs. e-reserves versions for course readings

Whenever possible, please look at the actual books rather than just the e-reserves (scanned versions available online). Scanned versions, especially those made from photocopies, do not do justice to the many and important illustrations in the readings for this class; besides, one objective of the course is to raise your consciousness about the "look and feel" of books. However, for your convenience, scanned versions are available through College Library's e-reserve collections. If everything marked CLR or ER is not yet available at the beginning of the term, please be patient: the reserves operation in College Library handles mountains of materials quickly and efficiently, just not instantaneously.

Location codes

- CLR book on reserve in College Library Reserve Book Coll., 1st Fl.
- ER scanned version on e-reserve through College Library
- L@UW scanned version available on Learn@UW
- SC book in Special Collections Reading Room, 986 Memorial Library

Books in Special Collections

The readings often discuss early and rare scientific books, and we are fortunate to have such rare books available for more detailed examination in the Department of Special Collections. During class we will spend time with many of these volumes, and you are also invited to look at them on your own in the Special Collections Reading Room. To that end, we'll keep a list of books we've examined, together with their call numbers.



Assigned reading (by themes)

Typographic culture & scientific knowledge (weeks 2,3)

- Owen Gingerich, "Copernicus and the impact of printing," in *Copernicus yesterday and today*, ed. Arthur Beer and K. Aa. Strand (Oxford: Pergamon Press), 201-218. ER
- Henry Lowood, "The New World and the European catalog of nature," in *America in European consciousness, 1493-1750*, ed. Karen Ordahl Kupperman (Chapel Hill: [University of North Carolina Press], 1995), 295-323. ER
- T. Nummedal and P. Findlen, "Words of nature: Scientific books in the seventeenth century," *Thornton and Tully's scientific books, libraries, and collectors: A study of bibliography and the book trade in relation to the history of science*, 4th ed., considerably rev. and rewritten, ed. Andrew Hunter (Brookfield, VT: Ashgate, 1999), 164-215. ER

- Karen Reeds, "Publishing scholarly books in the sixteenth century," *Scholarly publishing*, 14 (1983), 259-274. ER
- Michael Twyman, *The British Library guide to printing: History and techniques* (Toronto: University of Toronto Press, 1998), chapter 1. ER, SC

Early journals & the experimental report (weeks 4, 5)

- Charles Bazerman, *Shaping written knowledge* (Madison: University of Wisconsin Press, 1988), selected chapters. ER
- Alan G. Gross et al., *Communicating science. The scientific article from the 17th century to the present* (New York: Oxford University Press, 2002), 17-23. ER

plus

- Choose from List A (to be supplied later) one article/chapter describing early scientific journals

Specialization and popularization (weeks 6, 10, 12, 13)

- Robert A. Day, *How to write & publish a scientific paper* [computer file], 5th ed. (Phoenix, Az.: Oryx Press, 1998), chapters 3, 18. Available through netLibrary – MadCat record for this book title contains Internet link
- Scott L. Montgomery, *The Chicago guide to communicating science* (Chicago: University of Chicago Press, 2003), skim chapter 7. ER
- Bernard Houghton, *Scientific periodicals: Their historical development, characteristics, and control* (Hamden, Conn.: Linnet Books, 1975), selected chapters. ER
- Bernard Lightman. "Marketing knowledge for the general reader: Victorian popularizers of science," *Endeavour*, 24:3 (Sept. 2000), 100-106.
- Karl Hufbauer, "Solar physics' evolution into a subdiscipline (1945-1975)," *New trends in the history of science*, ed. R.P.W. Visser et al. (Amsterdam: Rodopi, 1989), 73-91. ER
- A.J. Meadows, "Access to the results of scientific research," *Development of science publishing in Europe*, ed. A.J. Meadows (Amsterdam [etc.]: Elsevier Science Publishers, 1980), 43-62. ER
- James A. Secord, *Victorian sensation. The extraordinary publication, reception, and secret authorship of "Vestiges of the natural history of creation"* (Chicago: University of Chicago Press, 2000), chapter 1. ER

plus

- Choose from List D (to be supplied later) one article/chapter describing 19th-/20th-century scientific journals

Picturing nature (weeks 7-9)

- Ann Shelby Blum, introduction to *Picturing nature: American nineteenth-century zoological illustration* (Princeton, N.J.: Princeton University Press, 1993). ER, CLR
- Bamber Gascoigne, *How to identify prints* (New York: Thames and Hudson, 1986), sections 5a-6e, 9a-10e. ER, also College Library Main Book Collection, 3rd Fl. West, Rm 3191

- David Knight, *Zoological illustration: An essay towards a history of printed zoological pictures* (Folkstone, Kent / Hamden, Conn.: Wm Dawson & Son / Archon Books, 1977), chapter 2. ER, CLR
- Susan Sheets-Pyenson, "The effect of changes in printing technology on the development of natural history sciences during the 19th century," *Advent of printing: Historians of science respond to E. Eisenstein's The printing press as an agent of change*, ed. Peter F. McNally (Montreal: Graduate School of Library and Information Studies, McGill Univ., 1987), 21-26. ER

plus

- Choose from List C (to be supplied later) one article/chapter describing use and production of images of nature

Print and beyond (weeks 14, 15)

- Jean-Claude Guéron, *In Oldenburg's Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing*. Washington, DC: Association of Research Libraries, 2001. Available at <http://www.arl.org/arl/proceedings/138/guedon.html> . Concentrate on ch. 7-12 (these are very short chapters!)
- Carol Tenopir and Donald W. King, "Trends in scientific scholarly journal publishing in the United States," *Journal of scholarly publishing*, 28 (1996), 135-170. ER
- Barschall Web site, concerning Gordon & Breach v. American Institute of Physics and American Physical Society. <http://www.library.yale.edu/barschall/> or <http://barschall.stanford.edu> . Skim.

plus

- Choose from List E (to be supplied later) one article/chapter about new models of scientific communication and/or issues of ownership

Lists to be supplied later

- A Articles/chapters describing early scientific journals
- B Selected illustrated scientific books in Special Collections (for assignment due on 3/19)
- C Articles/chapters describing use and production of images of nature
- D Articles/chapters describing 19th-/20th-century scientific journals
- E Articles/chapters discussing new models of scientific communication and/or issues of ownership