

# RICHARD L. KREMER

Curriculum Vitae  
September 2009

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## EDUCATION

- Ph.D. Harvard University, History of Science, 1984  
M.A. Harvard University, History of Science, 1978  
Ludwig-Maximilians-Universität, Munich, Institut f. Philosophie, 1980-82  
Associated Mennonite Biblical Seminaries and University of Notre Dame,  
Philosophical theology, 1975-76  
B.A. Goshen College, Goshen, IN, Physics and Religion, 1975

## TEACHING EXPERIENCE

- 1993- Associate Professor (with tenure), Dartmouth College, Department of  
History  
1987-93 Assistant Professor, Dartmouth College, Department of History and the  
Science Division (joint appointment)  
1985-87 Mellon Assistant Professor, Dartmouth College, Department of History  
1984-85 Visiting Faculty, University of New Hampshire, Department of History  
1983-84 Instructor, Harvard University, Department of the History of Science  
1982-83,  
1978-80 Teaching Fellow, Harvard University, Department of the History of  
Science

## PROFESSIONAL MEMBERSHIPS

History of Science Society  
British Society for the History of Science  
European Society for the History of Science  
Commission for the History of Ancient and Medieval Astronomy (International Union of  
the History and Philosophy of Science)  
Scientific Instrument Commission (also IUHPS)  
Scientific Instrument Society  
Sigma Xi, Full member

## AWARDS AND FELLOWSHIPS

- 2007 National Science Foundation, Science and Technology Studies, \$120,000  
to write a monograph on the "Copernican Revolution From  
Below"  
2006 Alexander von Humboldt Foundation, € 2300 for a short-term working  
visit to the University of Leipzig

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- 2005 Nominated for the Joseph H. Hazen Education Prize of the History of Science Society ("exemplary teaching and educational service")
- 2003-04 National Science Foundation, Science and Technology Studies, \$10,000 for an "International Conference on University Collections of Historic Scientific Instruments," co-PI with David A. Pantalony
- 2001-02 National Science Foundation, Science and Technology Studies, \$20,000 for a digital edition of Regiomontanus's *Defense of Theon*
- 2001 Herzog August Bibliothek, Wolfenbüttel, \$2700 for two-month residential fellowship for research on Copernicus and sixteenth-century astrology
- 2000 IREX Short-Term Travel Grant, \$1900 for travel to St. Petersburg to examine three Regiomontanus autograph manuscripts
- 1998-01 National Science Foundation, Science and Technology Studies Scholars Award, \$51,000 for research on Regiomontanus and fifteenth-century astronomy
- 1998-99 Dartmouth College Senior Faculty Fellowship, quarter year leave with salary
- 1997 Sigma Xi, The Scientific Research Society, elected Full Member
- 1994 The George A. and Eliza Gardner Howard Foundation, \$18,000 for Research Fellowship \$18,000
- 1994 Humboldt Research Fellowship, \$30,000 for year in Munich
- 1993 Rockefeller Center, Dartmouth, Interdisciplinary Research Grant, \$10,000 for collaboration with J. Dobrzycki, Polish Academy of Sciences, to study fifteenth-century astronomy
- 1993 History of Science Society, Travel Grant, \$800 to attend conference in Spain
- 1993 National Endowment for the Humanities, Special Travel Grant, \$700 for research in Poland, Germany and the Czech Republic
- 1990-91 Humboldt Research Fellowship, \$33,000 for year in Munich
- 1990-91 Fulbright Senior Research Fellowship, Federal Republic of Germany (declined)
- 1990-91 Dartmouth College Junior Faculty Fellowship, quarter year leave with salary
- 1988 German Academic Exchange Service (DAAD), \$7000 for four months in Berlin
- 1988 American Council of Learned Societies, Travel Grant, \$800 to attend conference in German Democratic Republic
- 1985-86 National Science Foundation, Summer Scholars Award, \$5000 for preparation of Helmholtz edition
- 1985 National Endowment for the Humanities, Travel-to-Collections Grant, \$500 for research in Berlin
- 1985 Central University Research Fund, University of New Hampshire, \$500 for Helmholtz edition
- 1982-83 German Academic Exchange Service (DAAD), Doctoral Research, \$30,000 for two years in Munich
- 1980-81 Social Science Research Council, International Doctoral Research Fellow, \$8000 for one year in Munich
- 1977 Society for Values in Higher Education, named Full Member
- 1976-80 Danforth Doctoral Fellow, The Danforth Foundation, four years support for graduate study at Harvard

## PUBLICATIONS

## Monographs and edited volumes

- Johannes Kepler, from Tübingen to Zagan (Studia Copernicana, 42)*. Co-edited with Jarosław Włodarczyk. Warsaw: Polish Academy of Sciences, 2009.
- The circulation of astronomical knowledge in early modern Europe (Journal for the history of astronomy, 38/3)*. Cambridge: Science History Publications Ltd, 2007.
- Study, measure, experiment: Stories of scientific instruments at Dartmouth*. Authored with David Pantalony and Francis Manasek. Norwich, VT: Terra Nova Press; distributed by University Press of New England, 2005.
- The thermodynamics of life and experimental physiology, 1770-1880*. New York: Garland Publishing, Inc., 1990.
- Letters of Hermann von Helmholtz to his wife, 1847-1859. Boethius Reihe, xxiii*. Stuttgart: Franz Steiner Verlag, 1990.

## Articles

- “Copernicus.” *Kindlers neues Literatur-Lexikon*, 3d ed. Munich: Kindler, in press.
- “A time to keep and a time to cast away: Thoughts on acquisitions for university instrument collections.” *Rittenhouse*, in press.
- “War Bernhard Walther, Nürnberger astronomischer Beobachter des 15. Jahrhunderts, auch ein Theoretiker?” In *Astronomie in Nürnberg*, ed. Gudren Wolfschmidt, pp. 32-57. Hamburg: Nuncius Hamburgensis, in press.
- “Kepler and the Graz Calendar Makers: Computational foundations of astrological prognostication.” *Studia Copernicana*, 42 (2009), 77-100.
- “Physiology.” In *The Cambridge history of science*, vol. 6, *The modern biological and earth sciences*, pp. 342-66. Ed. Peter J. Bowler and John V. Pickstone. Cambridge: Cambridge University Press, 2009.
- “Schreibkalender und die Copernicanische ‘Revolution von unten’.” In *Verzeichnis der Schreibkalender des 17. Jahrhunderts*, pp. 39-42. Ed. Klaus-Dieter Herbst. Jena: Verlag HKD, 2008.
- “John of Murs, Wenzel Faber and the computation of true syzygy in the fourteenth and fifteenth centuries.” In *Mathematics celestial and terrestrial: Festschrift für Menso Folkerts zum 65. Geburtstag, Acta Historica Leopoldina 54* (2008), 147-60.
- “‘Abbreviating’ the Alfonsine Tables in Cracow: The *Tabulae Aureae* of Petrus Gaszowiec (1448).” *Journal for the history of astronomy*, 38 (2007), 283-304.
- “Harold E. Edgerton’s early high-speed movie cameras.” In *East and West, the common European heritage: Proceedings of the XXV Scientific Instrument Symposium*, pp. 171-76. Cracow: Jagiellonian University Museum, 2006.
- “Copernicus among the astrologers: A preliminary study.” In *Astronomy as a model for the sciences in early modern times*, pp. 225-52. Ed. Menso Folkerts and Andreas Kühne. Augsburg: Rauner Verlag, 2006.
- “Inventing instruments and users: Harold Edgerton and the General Radio Company, 1932-1970.” In *Who needs scientific instruments?*, pp. 253-62. Ed. Bart Grob and Hans Hooijmaijers. Leiden: Museum Boerhaave, 2006.
- “Text to trophy: Shifting representations of Regiomontanus’s library.” In *Lost libraries: The destruction of great book collections since antiquity*, pp. 75-90. Ed. James Raven. London: Palgrave Macmillan, 2004.
- “Wenzel Faber’s table for finding true syzygy.” *Centaurus*, 45 (2003), 305-29.
- “Thoughts on John of Saxony’s method for finding true syzygy.” *Historia mathematica*, 30 (2003), 263-77.

- “The Vancouver Conference on ‘Astronomy and its Histories’.” *Journal for the history of astronomy*, 32 (2001), 187.
- “Hayes, Augustus Allen (1806-1882).” *American national biography*, 10: 383-85. Ed. John A. Garraty and Mark C. Carnes. 24 vols. New York: Oxford University Press, 1999.
- “Alfonsine meridians: Tradition versus experience in astronomical practice c. 1500” (with Jerzy Dobrzycki). *Journal for the history of astronomy*, 29 (1998), 187-99.
- “The eye as inscription device in the 1870s: Optograms, cameras, and the photochemistry of vision.” In *Biology integrating scientific fundamentals: Contributions to the history of interrelations between biology, chemistry, and physics from the 18th to the 20th centuries*, pp. 359-81. Ed. Brigitte Hoppe. Munich: Institut für Geschichte der Naturwissenschaften, 1997. Reprinted in Derek Ogbourne, *The shutter of death: An investigation into optography* (London: Lulu, 2007), 29-43; 2d edition as *Encyclopedia of optography* (London: Muswell Press, 2008), 61-75.
- “Peurbach and Maragha astronomy? The ephemerides of Johannes Angelus and their implications” (with Jerzy Dobrzycki). *Journal for the history of astronomy*, 27 (1996), 187-237.
- “Gleanings from the archives? The ‘Helmholtz Industry’ and unpublished sources.” In *Universalgenie Helmholtz: Rückblick nach 100 Jahren*, pp. 379-400. Ed. Lorenz Krüger. Berlin: Akademie-Verlag, 1994.
- “Innovation through synthesis: Helmholtz and color research.” In *Hermann von Helmholtz and the Foundations of Nineteenth-Century Science*, pp. 205-58. Ed. David Cahan. Berkeley: University of California Press, 1993.
- “Kommentar” (with Goedelieve van Heteren). In *Johannes Müller und die Philosophie*, pp. 293-99. Ed. Michael Hagner and Bettina Wahrig-Schmidt. Berlin: Akademie Verlag, 1992.
- “From psychophysics to phenomenalism: Mach and Hering on color vision.” In *The invention of physical science: Intersections of mathematics, theology and natural philosophy since the seventeenth century*, pp. 147-73. Ed. Mary Jo Nye, Joan Richards and Roger Stuewer. Dordrecht: Kluwer Academic Publishers, 1992.
- “Building institutes for physiology in Prussia, 1836-1846: Contexts, interests and rhetoric.” In *The laboratory revolution in medicine*, pp. 72-109. Ed. Andrew Cunningham and Perry Williams. Cambridge: The University Press, 1992. Excerpts reprinted in Deborah Brunton, ed., *Medicine transformed: Health, disease and society in Europe, 1800-1930* (Manchester: Manchester University Press, 2004).
- “Between *Wissenschaft* and praxis: Experimental medicine and the Prussian state, 1807-1850.” In *'Einsamkeit und Freiheit' neu besichtigt: Universitätsreformen und Disziplinenbildung in Preussen als Modell für Wissenschaftspolitik im Europa des 19. Jahrhunderts*, pp. 155-70. Ed. Gert Schubring. Stuttgart: Franz Steiner Verlag, 1991.
- “Defending Lavoisier: The French Academy’s prize competition of 1821.” *History and philosophy of the life sciences*, 8 (1986), 41-65.
- “Child of Saturn: The Renaissance church tower at Niederaltaich” (with A. Carr). *Sixteenth century journal* 17 (1986), 401-34.
- “Walther’s solar observations: A reply to R. R. Newton.” *Quarterly journal of the Royal Astronomical Society* 24 (1983), 36-47.
- “The use of Bernard Walther’s astronomical observations: Theory and observation in early modern astronomy.” *Journal for the history of astronomy* 12 (1981), 124-32.
- “Bernard Walther’s astronomical observations.” *Journal for the history of astronomy* 11 (1980), 174-91.

Book Reviews

- Review of Miguel Ángel Granada and Édouard Mehl, eds., *Nouveau ciel, nouvelle terre: La révolution copernicienne dans l'Allemagne de la réforme (1530-1630)* (Paris: Les belles lettres, 2009). *Isis*, in press.
- Review of Anita McConnell, *Jesse Ramsden (1735-1800), London's leading scientific instrument maker* (Aldershot: Ashgate, 2007). *Nuncius*, in press.
- Review of John North, *Cosmos: An illustrated history of astronomy and cosmology* (Chicago: University of Chicago Press, 2008). *Journal for the history of astronomy*, in press.
- Review of Noretta Koertge, editor-in-chief, *New dictionary of scientific biography*, 8 vols. (Detroit: Thomson Gale, 2008). *Journal for the history of astronomy*, in press.
- Essay review of William Clark, *Academic charisma and the origins of the research university* (Chicago: University of Chicago Press, 2006). *Isis*, 99 (2008), 808-10.
- Review of Michael J. Crowe, *Mechanics from Aristotle to Einstein* (Santa Fe: Green Mountain Press, 2007). *Journal for the history of astronomy*, 39 (2008), 127.
- Review of Klaus Hentschel, *Gaußens unsichtbare Hand: Der Universitäts-Mechanicus und Maschinen-Inspector Moritz Meyerstein: Ein Instrumentenbauer im 19. Jahrhundert* (Göttingen: Vandenhoeck & Ruprecht, 2005). *Isis*, 98 (2007), 649-50.
- Essay review of Miguel A. Granada, et al., eds., *Christoph Rothmanns Handbuch der Astronomie von 1589* (Frankfurt aM: Deutsch, 2003) and Jürgen Hamel, *Die astronomische Forschungen in Kassel unter Wilhelm IV* (Frankfurt aM: Deutsch, 2002). *Journal for the history of astronomy*, 38 (2007), 125-29.
- Review of Sean J. Johnston, *A history of light and colour measurement* (Bristol: Institute of Physics Publishing, 2001). *British journal for the history of science*, 39 (2006), 442-44.
- Review of José Chabás and Bernard R. Goldstein, *The Alfonsine tables of Toledo* (Dordrecht: Kluwer, 2003). *Isis*, 96 (2005), 425-26.
- Review of John Robert Christianson, ed., *Tycho Brahe and Prague, crossroads of European science: Proceedings of the International Symposium on the History of Science in the Rudolphine Period, Prague, 22 - 25 October 2001* (Frankfurt aM: Deutsch, 2002). *Journal for the history of astronomy*, 36 (2005), 456-58.
- Review of Nicholas J. Wade and Josef Brosek, *Purkinje's vision: The dawning of neuroscience* (Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, 2001). *Journal of the history of the behavioral sciences*, 39 (2003), 98-99.
- Review of José Chabás and Bernard R. Goldstein, *Astronomy in the Iberian peninsula: Abraham Zacut and the transition from manuscript to print* (Philadelphia: American Philosophical Society, 2000). *Journal for the history of astronomy*, 33 (2002), 291-92.
- Review of Christoph Schöner, *Mathematik und Astronomie an der Universität Ingolstadt im 15. und 16. Jahrhundert* (Berlin: Duncker & Humblot, 1994). In *Journal for the history of astronomy*, 30 (1999), 173-75.
- Review of Christian Bonah, *Les sciences physiologiques en Europe: Analyses comparées du XIXe siècle* (Paris: VRIN, 1995). In *Isis*, 89 (1998), 557-58.
- Review of M. Norton Wise, ed., *The values of precision* (Princeton: Princeton University Press, 1995). In *Centaurus*, 40 (1998), 172-73.
- Review of R. Steven Turner, *In the eye's mind: Vision and the Helmholtz-Hering controversy* (Princeton: Princeton University Press, 1994). In *British journal for the history of science*, 29 (1996), 482-83.
- Review of Hans-Jörg Rheinberger and Michael Hagner, eds., *Die Experimentalisierung des Lebens: Experimentalsysteme in den biologischen Wissenschaften 1850/1950*

- (Berlin: Akademie Verlag, 1993). In *Bulletin of the history of medicine*, 70 (1996), 326-28.
- Review of Arleen Tuchman, *Science, medicine, and the state of Germany: The case of Baden, 1815-1871* (Oxford: Oxford University Press, 1993). In *Isis*, 86 (1995), 661-62.
- Review of Carl Friedrich Kielmeyer, *Ueber die Verhältnisse der organischen Kräfte unter einander in der Reihe der verschiedenen Organisationen, die Geseze und Folgen dieser Verhältnisse* [1793], facsimile ed. by K. T. Kanz (Marburg: Basilisken-Press, 1993) and K. T. Kanz, *Kielmeyer-Bibliographie* (Stuttgart: Verlag für Geschichte der Naturwissenschaften und der Technik, 1991). In *Isis*, 86 (1995), 333-34.
- Review of Alec Eden, *The search for Christian Doppler* (Vienna: Springer-Verlag, 1992). In *Isis*, 85 (1994), 708-9.
- Review of Arthur Donovan, *Antoine Lavoisier: Science, administration and revolution* (Oxford: Blackwell, 1993). In *Science*, 266 (1994), 1890-91.
- Review of J. A. Henderson, *On the distances between sun, moon & earth according to Ptolemy, Copernicus & Reinhold* (Leiden: Brill, 1991). In *Journal for the history of astronomy* 24 (1993), 148-50.
- Review of M. Brümmer, *Staat contra Universität: Die Universität Halle-Wittenberg und die Karlsbader Beschlüsse, 1819-1848* (Weimar: Böhlau Nachfolger, 1991). In *Isis* 83 (1992), 673-74.
- Review of E. Zinner, *Entstehung und Ausbreitung der Copernicanischen Lehre*, 2d ed. (Munich: Beck, 1988). In *Isis* 82 (1991), 129-30.
- Review of P. Gouk, *The ivory sundials of Nuremberg 1500-1700* (Cambridge: Whipple Museum of the History of Science, 1988) and D. J. Bryden, *Sundials and related instruments* (Cambridge: Whipple Museum of the History of Science, 1988). In *Isis* 81 (1990), 104-5.
- Review of J. D. North, *Horoscopes and history* (London: Warburg Institute, 1986) and S. J. Tester, *A history of Western astrology* (Woolbridge: Boydell, 1987). In *Speculum* 65 (1990), 206-9.
- Review of D. E. Osterbrock, et al., *Eye on the sky: Lick Observatory's first century* (Berkeley: University of California Press, 1988). In *American scientist* 77 (1989), 97-98.
- Review of P. Zambelli, ed., *Astrologi hallucinati: Stars and the end of the world in Luther's time* (New York: Walter de Gruyter, 1986). In *Journal for the history of astronomy* 20 (1989), 140-41.
- Review of N. Reingold, ed., *The papers of Joseph Henry, vol. 5: January 1841-December 1843, The Princeton Years* (Washington, D.C.: Smithsonian Institution Press, 1985). In *Isis* 78 (1987), 133-34.
- Review of J. W. Dauben and V. S. Sexton, eds., *History and philosophy of science: Selected papers* (New York: New York Academy of Sciences, 1983). In *Isis* 77 (1986), 519.
- Review of F. W. Bessel, *Ich habe Euch lieb aber der Himmel ist mir näher: Eine Autobiographie in Briefen*, edited by E. Schlieper (Minden: J. C. C. Bruns GmbH & Co., 1984). In *Journal for the history of astronomy* 17 (1986), 210-11.
- Review of Hermann von Helmholtz, *Über die Erhaltung der Kraft*, introduction by H.-J. Treder, transcribed by C. Kirsten (Weinheim: Physik-Verlag, 1983). In *Isis* 76 (1985), 281-82.
- Review of W. Schröder, *Disziplingeschichte als wissenschaftliche Selbstreflexion der historischen Wissenschaftsforschung* (Bern: Peter Lang, 1982). In *Journal for the history of astronomy* 13 (1982), 215-17.
- Review of G. W. F. Hegel, *Les orbites des planètes (dissertation de 1801)*, translation and introduction by F. de Gandt (Paris: Vrin, 1979). In *Journal for the history of astronomy* 12 (1981), 69-71.

Review of K. Pilz, *600 Jahre Astronomie in Nürnberg* (Nuremberg: Verlag Hans Carl, 1977). In *Journal for the history of astronomy* 11 (1980), 208-10.

## EXHIBITIONS CURATED

- “The spectacle of science.” Classroom demonstration apparatus from 1780 to 1960. Kresge Library, Dartmouth College, September 2009 – March 2010.
- “Die Theorie der Sterne,” in *Ein Kosmos des Wissens: Weltschriftenerbe in Leipzig* (Leipzig: Universitätsbibliothek, 2009), pp. 60-73. Catalogue for exhibition of same name, at the University of Leipzig Library (March-May 2009), Grollier’s Club in New York (Sept-Nov 2009) and Houston Public Library (Nov-Dec 2009).
- Count on it: Two hundred years of computation.* An exhibit of 25 artifacts and books from Dartmouth’s King Collection of Scientific Instruments. Kresge Library, Dartmouth College, May – September 2006.
- Science in the library, 1769-1869.* An exhibit of ca. 60 books and related archival materials, illustrating the changing role of science at Dartmouth during the college’s first century. Baker Library corridor, Dartmouth College, May – November 2004.
- Illuminating instruments: Studying light at Dartmouth.* An exhibit of ca. 40 artifacts from Dartmouth’s King Collection of Scientific Instruments. Harrington Gallery, Hood Museum of Art, Dartmouth College, June – October 2004.

## WORKS-IN-PROGRESS

### Monographs

- Cosmological controversy in fifteenth-century Europe* (with Michael Shank).
- Regiomontanus’s Defense of Theon against George of Trebizond, ca. 1465-75*, a digital facsimile edition with transcription, annotations, and additional research materials (with Michael Shank and the e-Regio team at Baker-Berry Library and Academic Computing of Dartmouth College).
- The practice of Alfonsine astronomy in the fifteenth century: A survey of incunable calendars and almanacs.*
- The Copernican Revolution from below.*

### Articles

- “Regiomontanus’s library: An edition of three sixteenth-century inventories.”
- “The Leipzig Tables of 1408 and the origins of the *Tabulae resolutae*.”
- “A ‘frontier thesis’ for scientific instrument-makers? The circulation of materials, designs and craftsmen in colonial and antebellum America.”

## SELECTED PUBLIC TALKS AND INVITED LECTURES

- “Reading Artifacts.” Summer institute in the material culture of science,” Canada Science and Technology Museum, Ottawa, August 2009.
- “Selling surveying instruments in America before the printed trade catalog.” Colonial Compass Collectors’ Association, Philadelphia, June 2009; XXIII International Congress of History of Science, Budapest, July 2009.
- “On paper instruments, or Fadenkunst.” Workshop on terminology and typology of astronomical images, 1450-1650, Whipple Museum and Trinity College, University of Cambridge, July 2009.

- "The battle for truth: Science vs. religion." Pre-performance symposium before Brecht's *The life of Galileo*, Underground Railway Theater, MIT, Cambridge, May 2009.
- "Lauching American astrophysics: An astronomer, an instrument, and a book." Fourteenth Annual Richard K. Gehrenbeck Memorial Lecture, Rhode Island College, Providence, April 2009.
- "Four uniquely preserved incunbula in the Crawford Collections, or four tesseræ in a mosaic of almanacs." Workshop on the Crawford Collection at the Royal Observatory of Edinburgh, April 2009.
- "Teaching physics at American universities and colleges around 1900: Laboratories, apparatus, and European practices." Symposium on Experiments and Instruments in the History of Science Teaching, Universität Regensburg, April 2009.
- "Reading Artifacts: On Teaching With Historic Scientific Instruments." Committee on Education Plenary Workshop, History of Science Society, Pittsburgh, November 2008.
- "On Cataloging Astronomical Tables in Late Medieval Latin Manuscripts." Internationale Handschriftenbearbeitertagung, Staatsbibliothek zu Berlin, October 2008.
- "Centres of genial influence: Spaces, dreams and instruments in early American astronomical observatories." 27<sup>th</sup> Symposium of the Scientific Instrument Commission, University of Lisbon, Portugal, September 2008.
- "Kepler's early calendars." International conference on "Kepler 2008: From Tübingen to Sagen," University of Zielona Góra, Poland, June 2008.
- "Making one of Saturn's moons': Instrument making along New England's northern frontier." 26<sup>th</sup> Symposium of the Scientific Instrument Commission, Cambridge, Mass., September 2007.
- "Two classics of early American solar spectroscopy" (Invited lecture). American Chemical Society, Division of the History of Chemistry, Boston, August 2007.
- "A time to keep and a time to cast away: Thoughts on acquisitions for university instrument collections." SICU2: An International Workshop on Historic Scientific Instrument Collections in the University, University of Mississippi, June 2007.
- "Introduction to Latin astronomical tables of the late Middle Ages." Universitätsbibliothek Leipzig, Workshop, September 2006.
- "Harold E. Edgerton's early high-speed cameras." 25<sup>th</sup> Symposium of the Scientific Instrument Commission, Cracow, September 2006.
- "Reworking the Alfonsine Tables in Cracow: The *Tabulae Aureae* of Petrus Gaszowiec (1448)." Second International Conference of the European Society for the History of Science, Cracow, September 2006.
- "Thoughts on Edgerton's early visual conventions." Dartmouth College Humanities Institute on "Visual culture and pedagogy in the life sciences, May 2006.
- "What happens to corporate museums when the corporations disappear?" International workshop on "Curating 20<sup>th</sup>-century science," Utrecht University Museum, October 2005.
- "Inventing and marketing a new stroboscope: Harold 'Doc' Edgerton and the General Radio Company from 1932-1960." International conference on "Who needs scientific instruments," Museum Boerhaave, Leiden, October 2005.
- "Bernhard Walther, c. 1430-1504." International colloquium on "Astronomy in Nürnberg," Nürnberg, April 2005.
- "Circular reasoning: Newton's color circle and diagrammatic representation of color vision." Colloquium in History of Science & Technology, University of Minnesota, March 2005.
- "Mingling conjectures with certainties': Newton and nineteenth-century theories of color vision." Dibner Institute Workshop on "The legacy of Newton's *Opticks*," MIT, November 2004.

- “Illuminating instruments: Light, science and material culture.” Gallery talk, Hood Museum of Art, Dartmouth College, July 2004.
- “The enigma of Heisenberg.” Pre-performance lecture, Northern Stage production of Michael Frayn’s *Copenhagen*, White River Junction, VT, March 2003.
- “Copernicus among the astrologers: The reception of Copernican astronomy in practica and calendars printed from 1544-1630.” International symposium on “Astronomy as a model for the sciences in early modern times,” Historisches Seminar, Ludwig-Maximilians-Universität München, March 2003
- “Reading things: On adding instruments to the history of science.” Dartmouth Chapter of the Sigma Xi, June 2002.
- “The nature of the almanac: Producers and consumers in the astrological marketplace of late fifteenth-century Europe.” Department of Science and Technology Studies, University College London, October 2001; History of Science Society, Milwaukee, November 2002.
- “From text to trophy: Shifting functions of Regiomontanus’s library.” History of Science Society Annual Meeting, Pittsburgh, November 1999; Cambridge Project for the Book Trust, Conference on Lost Libraries, Cambridge University, September 2000.
- “Science, technology and American society in the 1950s.” Winterset Lecture Series, Tuftonboro, NH, February 2000.
- “Regiomontanus und die ‘Rolle der Astronomen’ im 15. Jahrhundert.” Institut für Geschichte der Naturwissenschaften, Ludwig-Maximilians-Universität, Munich, February 1999.
- “Tradition *versus* experiment around 1500.” Invited paper for “Symposium on Astronomy at the Dawn of the Renaissance” (with Jerzy Dobrzycki). XXth International Congress of History of Science, Liège, July 1997. Abstract in *Book of abstracts—Symposia*, ed Jan Vandersmissen (Liège, 1997), 164.
- “Newton, thermodynamics and ‘heat death’ in Stoppard’s *Arcadia*.” Drama Department Lecture Series, Dartmouth College, July 1997.
- “Hungarian courts and astronomical reform in the fifteenth century: A new link?” American-Hungarian Conference on Hungarian Contributions to Scholarship, Indiana University, April 1997.
- “Musings on ‘science wars,’ or What’s the history of science up to these days.” Physics Department Colloquium, Dartmouth College, November 1996.
- “Peurbach and Maragha astronomy: The astronomical table of Johannes Angelus and their implications” (with Jerzy Dobrzycki). History of Science Society Annual Meeting, Minneapolis, October 1995; Medieval University Seminar, Dartmouth College, January 1996.
- “Eugenics, scientific racism and social engineering since 1850 in America.” Robert Hull Fleming Museum, University of Vermont, September 1995.
- “The physiological institute as a site for ‘Romantic’ science.” Yale Workshop on German Medicine and Science in the Era of Romanticism, 1780-1830, New Haven, April 1994.
- “Gleanings from the archives? The ‘Helmholtz Industry’ and unpublished sources.” Internationale Konferenz zum 100. Todesjahr von Hermann von Helmholtz, Tegernsee, Germany, January 1994.
- “Physiological behavior and clinical practice: An ethnographic examination of early German physiological institutes for experimental physiology.” Second Anglo-Dutch Wellcome Symposium on the History of Medicine, Nijmegen, December 1993.
- “The eye as inscription device in the 1870s: Willy Kühne’s optograms and the photochemistry of vision.” XIX International Congress of History of Science, Zaragoza, Spain, August 1993.

- "Pedagogy versus research in Purkyne's Breslau laboratory." British-North American Joint Meeting of the Canadian, British and American History of Science Societies, Toronto, July 1992.
- "Helmholtz, Hering and rhetorical strategies for color research." Symposium on Experimental Strategies in the Biological Sciences, 1850-1950, Medizinische Universität zu Lübeck, November 1991.
- "Wissenschaftsverwaltung oder Wissenschaftspolitik? Physiologie und die deutschen Staaten, 1840-1848." Institut für Wissenschaftsgeschichte, Georg-August-Universität Göttingen, Göttingen, April 1991.
- "Forschen oder Lehren? Die Medizin als Wissenschaft an den preussischen Universitäten des frühen 19. Jahrhunderts." Forschungsinstitut des Deutschen Museums, Munich, January 1991.
- "Innovation through synthesis: Helmholtz and color research." Helmholtz Conference, Morris Fishbein Center for the History of Science and Medicine, University of Chicago, October 1990.
- "Seeing red: Facts, values and disciplines in nineteenth-century German universities." Committee on the Conceptual Foundations of Science, University of Chicago, Chicago, April 1990.
- "Johann Engel and two Copernican puzzles." Institute for the History of Science and Technology, USSR Academy of Sciences, Moscow, March 1990.
- "Helmholtz, Hering and Mach on color vision: Psychology, physics or spiritualism?" History of Science Society Annual Meeting, Gainesville, October 1989.
- "Experimental medicine and the Prussian state, 1818-1850." XVIII International Congress of History of Science, Hamburg, August 1989.
- "Creating reality or creating disciplines? The laboratory in nineteenth-century medicine." Committee on the Conceptual Foundations of Science, University of Chicago, Chicago, May 1989.
- Commentary on David Cahan's paper, "Helmholtz and the civilizing power of science." Boston Colloquium for the Philosophy of Science, Boston, April 1989.
- "The origins of physiological institutes in Prussia, 1818-1848: Interests, rhetoric and experiments." Physiologisches Institut, Freie Universität Berlin, December 1988.
- "Building institutes for physiology in Prussia: Rhetoric, interests, and politics." Wellcome Unit for the History of Medicine, Cambridge University, September 1988.
- "Academic politics, medical reform, and the specialization of physiology." First International Institute of the German Democratic Republic: Philosophy and History of Science, Leipzig, June 1988.
- "Building careers in German science, ca. 1850." Five-College Seminar in the History of Science, Smith College, Northampton, MA, April 1987.
- "Building careers in German science, ca. 1850." History of Science Society Annual Meeting, Pittsburgh, October 1986.
- "The thermodynamics of life in the nineteenth century." Science College, Concordia University, Montreal, January 1985.
- "Dulong and Despretz on animal heat (1823): A failed rescue of Lavoisier's model." International School of the History of Biological Sciences, Ischia, Italy, June 1984.
- "From Stoffwechsel to Kraftwechsel: Voit, Rubner and the study of nutrition in the 1880s." History of Science Society Annual Meeting, Norwalk, CT, October 1983.
- "Physics and experimental physiology in the 1860s: Heidenhain vs. Fick." Joint Atlantic Seminar in the History of the Physical Sciences, Washington, D.C., April 1983; abstract in *History of physics newsletter*, 1 (1983): 81.

- “Astrologers and astrolabes: The Niederaltaich horoscope of 1514.” American Astronomical Society Meeting, Boston, January 1983; abstract in *Bulletin of the AAS*, 14 (1982): 897.
- “Two methods for physics? Schelling and Helmholtz on Faraday and the philosophy of science.” XVI International Congress of the History of Science, Bucharest, August 1981; abstract in *Proceedings, A. Scientific Sections*, 1981, p. 147.
- “Helmholtz und die Anwendung des Princips von der Erhaltung der Kraft auf das Gebiet des Lebendigen.” Institut für Geschichte der Naturwissenschaften, Ludwig-Maximilians-Universität, Munich, June 1981.
- “Recent approaches to the study of history of science and technology in America.” National Museum for the History of Science and Technology, Budapest, February 1981.
- “Bernard Walther’s astronomical observations.” Joint Atlantic Seminar in the History of the Physical Sciences, College Park, MD, April 1980.

### PEER REVIEW ACTIVITIES

- Referee (book manuscripts): Princeton University Press, Harvard University Press, University Press of New England, Cambridge University Press, University of Chicago Press, Oxford University Press (1990-present)
- Referee (journal articles): *Isis*, *Journal for the history of astronomy*, *Science in context*, *Journal for the history of biology* (1990-present)
- Referee (research grants): National Science Foundation, National Endowment for the Humanities (1988-present)
- Review panel member: History and Philosophy of Science and Medicine, National Endowment for the Humanities, Fellowship Program (2000, 2001)
- External PhD dissertation reader, Princeton University (2007)
- Tenure and promotion reviewer, Smith College (2000), Cambridge University (2003), Haverford College (2007)

### COMMITTEE WORK FOR PROFESSIONAL ORGANIZATIONS

- Member, History of Science Society, Development Committee (2005-08)
- Member, History of Science Society, Governing Council (2000-02)
- Chair, History of Science Society Task Force on K-12 Education (1999-2000)
- Member, Hazen Prize Committee (outstanding teaching award), History of Science Society (1998-2001, Chair 1999-2001)
- Organized, chaired and commented on the Committee on Education’s Workshop on “Teaching History of Science via the WWW,” History of Science Society annual meeting, Kansas City (October 1998)
- Member, Committee on Education, History of Science Society (1995-99, Chair 1997-99)
- Member, Committee on the Electronic World, History of Science Society, 1994
- Program Co-Chair, planned the 1994 annual meeting of the History of Science Society, held in New Orleans (1993-94)
- Member, National Committee for Dibner Visiting Historians of Science, History of Science Society (1989-93)
- Chair, New England Chapter of the Alexander von Humboldt Association of America (1999-2001)

### EDITORIAL WORK

- Editorial Review Board, Classical Science Press, 2008-present.
- Advisory Editorial Board, *Isis*, 2007-present.

Advisory Editorial Board, *Studia Copernicana*, 2007-present.  
Reviews Editor, *Journal for the history of astronomy*, 2007-present.

## RELATED PROFESSIONAL ACTIVITIES

- Organized and helped lead week-long summer institute on historic scientific instruments at the Canada Science and Technology Museum, Ottawa, August 2009.
- Member, Scientific Program Committee, 27<sup>th</sup> Symposium of the Scientific Instrument Commission, University of Lisbon, 2008.
- Chair, Steering Committee for SICU2: An International Workshop on Historic Scientific Instrument Collections in the University, University of Mississippi, June 2007, with support from the NSF.
- Co-organizer with José Chabás, day-long symposium on "History of astronomy in the late medieval and early modern periods," Second International Conference of the European Society for the History of Science, Cracow, September 2006.
- Member, National Advisory Board, American Museum of Radio and Electricity, Bellingham, WA, [www.americanradiomuseum.org](http://www.americanradiomuseum.org) (2003- present)
- Chair, Planning Committee for "Scientific Instrument Collections in the University," an international conference held at Dartmouth, 24-27 June 2004, co-sponsored by Dartmouth and the Scientific Instrument Commission of the International Union of the History & Philosophy of Science, with support from NSF and Dartmouth's Dickey Center and Leslie Center, [www.dartmouth.edu/~sicu](http://www.dartmouth.edu/~sicu) (2002-04)
- Chair, "Astronomy and its histories: A session in honor of Owen Gingerich," History of Science Society Annual Meeting, Vancouver, 4 November 2000
- Consultant, *Life Magazine's* special issue on the Millenium, October 1997
- Invited participant, Digital Libraries in Science and Technology Studies Conference, New Orleans, 11-12 October 1994
- Participant, Seminar on the History of the Organization of Science, co-sponsored by the ACLS-IREX and the USSR Academy of Sciences, Moscow and Leningrad (1990)
- Member, Board of Directors, New Hampshire Humanities Council (1996-2003; Chair, 2000-1; Vice Chair, 1999-00; Chair, Search Committee for Executive Director, 2000-1; Member of Executive Committee, 1997-98, 1999-2003); Chair, Evaluation Committee, 1997-99)
- Discussion-Leader, "Of Apples and Origins, II: The Brain, the Mind and Human Meaning," New Hampshire Humanities Council (1995-96); "Of Apples and Origins, I: Stories of Life on Earth" (1993-94), both state-wide, three-month programs for the general public, consisting of reading circles, public lectures and large conferences on the history of literary, artistic and scientific attempts to understand the origin of the cosmos and of life, and the nature of human consciousness
- Designer and co-teacher, "The Scientist as Humanist," semester-length seminars for gifted high school students, New Hampshire State Department of Education (1988-92)
- Visiting Scholar, The National Faculty, Atlanta, consultant for high school teacher training programs in History of Science (1987-92)
- Public Lectures on origins of the Atomic Age, New Hampshire and Vermont Councils on the Humanities (1986-88)
- Steering committee member, Program in Technology, Society and Values, University of New Hampshire (1984-85)
- Consultant, CBS "American portraits" series, segment on Wilbur O. Atwater (1984)
- Exhibition designer, IBM permanent exhibition on the history of computing, with I. Bernard Cohen (1983)

- Research assistant, Library of Congress, Science Policy Group, Congressional Research Service; studied industrial innovation and science policy for the Joint Economic Committee of the U.S. Congress (1979)
- Resident tutor, Mather House, Harvard; organized history of science and German language seminars, advised prospective graduate students in this residence for 360 undergraduates (1978-80)
- Physics research, Turner High Precision X-Ray Crystallography Laboratory, Goshen College; designed and built software and hardware to control x-ray spectrographic equipment (1973-75)

## ADMINISTRATIVE AND SERVICE ACTIVITIES AT DARTMOUTH

### Campus-Wide

- Member, Task Force on Email and Collaboration Tools (2008-9)
- Member, Ad-Hoc Committee to Revise *Dartmouth's Sources: Their Use and Acknowledgment* (2007-8)
- Member, Council on Computing (2006-9)
- Member, Writing Program Steering Committee (2005-7)
- Informal curator, King Collection of Scientific Instruments (2004-present)
- Member, Tucker Foundation Council (2002-6)
- Member, Search Committee for Assistant Director of Community Service, Tucker Council (2003-4)
- Chair, Advisory Committee for Dartmouth's Historic Scientific Instrument Collection (2001-present)
- Chair, College Course Steering Committee (1999-2001, member 2001-2)
- Member, Dean's Ad Hoc Planning Committee for the Dartmouth Conference on "Globalizing the Academy" (2000)
- Member, Provost's Ad Hoc Committee for Dartmouth's Historic Scientific Instruments Collection (2000-1)
- Member, Search Committee for College Librarian (2000-1)
- Chair, Council on the Libraries (1999-2000, member 1997-2000)
- Member, Search Committee for Dean of the College (1998-9)
- Member, Search Committee for Historian/Philosopher of Biology (1997-8)
- Co-Chair, Committee to Revise *Dartmouth's Sources: Their Use and Acknowledgment* booklet (1997-8)
- Member, External Review Committee, Music Department (1997)
- Member, Search Committee for Eli Black Professorship in Jewish Studies (1997)
- Planning consultant, "The body and its image: Art, technology and medical knowledge," major exhibition, Hood Museum of Art (1996-7)
- Member, Venture Fund Selection Committee (grants for innovative uses of computer technologies in classroom teaching) (1996-7)
- Member, College Committee on Alcohol and Other Drugs (1996-8)
- Member, Committee on Graduate Fellowships (1989-90, 1993-4, 1995-6)
- Member, Search Committee for two Alumni Relations Officers, Office of the Vice President for Development and Alumni Relations (1994)
- Member, Dean's Committee of Premedical Advisors (1993-4)
- Member, Search Committee for College Archivist, Dartmouth College Libraries (1993-4)
- Member, Provost's Task Force on Graduate Studies (1990-1)
- Member, Executive Board, Institute for the Study of Applied and Professional Ethics, Dartmouth College (1989-90)
- Member, Steering Committee, Institute of Arctic Studies (1989-90)
- Member, President's Search Committee for Dean of the Faculty (1989)
- Member, Search Committee for Director of Social Science Computing (1989)

Founder and Co-Coordinator, Studies in the History and Philosophy of Science and Technology (1989-present)  
Faculty Advisor, Dartmouth Scientific Society (1987-9)  
Co-Coordinator, University Seminar on the Two Cultures (1986-90)  
Colloquia or other presentations to the Departments of Physics & Astronomy, Philosophy, Engineering, Education and the Baker Library Staff (1986-present)

#### Alumni Continuing Education

Lecturer, "Solar eclipses in science and the imagination," Dartmouth Alumni Tour, Turkey, 2006; China, 2009.  
Lecturer, "Three enigmas of creation," Weekend Seminar, Dallas Alumni Club, 2004  
Lecturer, "Galileo in Tuscany," Dartmouth Alumni College Abroad, Tuscany, 2002  
Lecturer, "From the Grand Tour to the Packaged Tour: Americans, Europeans and Identity," Dartmouth College Alumni College in the Swiss Alps for Families, July 2000  
Lecturer, "In search of German identity," Dartmouth Alumni College Abroad, Cruise on the Rhine and Moselle Rivers (1997)  
Lecturer, "Inventing universes: From myth to science and back," Weekend Seminar, Dartmouth Alumni Association of Orange County, Irvine, CA (1997)  
Lecturer, "Riddles of Creation," Weekend Seminar, Pacific Northwest Alumni Club, Portland (1994)  
Academic Director and Senior Lecturer, Dartmouth Alumni College on "Riddles of Creation: Cosmology and Human Creativity" (1994)  
Lecturer, "Islamic science," Dartmouth Alumni College (1992)  
Lecturer, "Science, Truth and the Hubble Space Telescope," Weekend Seminar, Dartmouth Club of Northern New Jersey (1992)  
Senior Lecturer (Darwin), Dartmouth Alumni College Abroad, Expedition-Cruise to the Galápagos Islands (1991)  
Lecturer, "Scientific revolutions and society," Weekend Seminar, Dartmouth Club of the Upper Valley (1989)  
Lecturer, "The machine in the garden: Science, technology and culture," Weekend Seminar, Dartmouth Club of Northern New Jersey (1987)  
Lecturer, "The machine in the garden," Weekend Seminar, Pacific Northwest Alumni Club, Portland (1986)  
Senior lecturer, Dartmouth Alumni College on "The Machine in the Garden: Science, Technology and Culture" (1986)

#### Departmental

Chair, Search Committee for Modern European Intellectual History (2009-10)  
Member, Search Committee for Civil Rights/Social Justice History (2008-9)  
Member, Search Committee for African History (2007-8)  
Director, History Foreign Study Program in London (2001-02)  
Member, Student Enrichment Funds Committee (2001-02)  
Vice Chair (1999-2000)  
Chair, Colloquium Planning Committee (1989-90, member 1999-2000)  
Member, Building Committee for the Academic Wing of Baker-Berry Library (1997-98)  
United Way Representative (1996-97)  
Member, Planning Committee, Seminar for Critical Historical Studies (1995-96)  
Vice Chair and Director of the History Honors Program (1995-96)  
Chair, European Sectional Planning (1992-94, 1995-96)  
Chair, Search Committee for Medieval History (1991-92)  
Member, European Committee on the Freshman Week (1991-92)

Member, Search Committee for African-American History (1989-90)  
Member, Policy and Curriculum Planning Committee (1989-90)  
Member, Class of 1859 Prize Committee (1985-86, 1989-90)  
Chair, Ad-Hoc Committee to Revise Student Prizes (1988-89)  
Secretary (1987-88, Winter 1989, 2000-01)  
Member, Student Relations Committee (1986-88)  
Library Representative (1985-86)

Masters of Liberal Studies (MALS) theses advised at Dartmouth

Metzler, Brenda S. "Gender identity formation in a Lancaster Mennonite community," 2001.  
Serrell Coonley, Nancy. "Communicating science with the public: A contextual approach," 2000.  
DeFelice, Barbara J. "Styles of geological research in the Alaskan Arctic in the early twentieth century: The work of Ernest de Koven Leffingwell," 1999.  
Sharp, Margaret. "The changing image of *Tyrannosaurus rex*: Three case studies of visual representation," 1999.  
St. Germaine, Sherry. "Art in science—science in art: Three centuries of scientific illustration," 1994.  
Hammond, William. "Eureka! Anecdotes about Archimedes and other mathematicians," 1990.