

Curriculum Vitae

James Rodger Fleming

Charles A. Dana Professor of Science, Technology, and Society
Colby College, Waterville, Maine 04901 USA

Email: jfleming@colby.edu; Phone: 1-207-859-5881; FAX: 1-207-859-5868

CURRENT AFFILIATION

Charles A. Dana Professor and Director of Science, Technology and Society, Colby College

EMPLOYMENT

Colby College, Visiting Assistant to Dana Professor of STS 1988-present
American Meteorological Society, Historical Consultant, 1986-88
Princeton University, Fellow and Preceptor, Department of History, 1982-85
Private Consulting Meteorologist, 1974-82
University of Washington, Research Meteorologist, 1973-74
National Center for Atmospheric Research, Research Meteorologist, 1973

EDUCATION

Princeton University, Ph.D. History, 1988; M.A. History of Science, 1984
Colorado State University, M.S. Atmospheric Science, 1973
Pennsylvania State University, B.S. Astronomy, 1971

AWARDS, APPOINTMENTS, HONORS

Consultant, The Goddard Project, Societal implications of negative emissions technologies
Advisor, "Making Climate History," Leverhulme Trust grant to University of Cambridge, 2019-2024
International Association of Meteorology and Atmospheric Sciences, keynote speaker, 2019
Distinguished Alumnus Award, Forest Hills School District, PA, 2018
American Geophysical Union, John Tyndall Lecturer in Global Environmental Change, 2017
American Meteorological Society, coordinator of the Historical Research Network, 2017-2021
Smithsonian Institution Research Associate, 2016-2019
Eduard Brückner Prize for interdisciplinary climate research, 2015
Distinguished Alumnus Award, Colorado State University Department of Atmospheric Science, 2015
American Association for the Advancement of Science (AAAS), elected Fellow, 2003
American Meteorological Society, elected Fellow, 2011
International Commission on the History of Meteorology (ICHM), Founder and first President, 2000-2005, Senior Advisor, 2006-present
Columbia University, Visiting Professor in History, 2013-14
Stockholm University, International Meteorological Institute, Guest Researcher, 2015.
University of Vienna/ Vienna Circle, Principal Lecturer, "Climate Studies," 2013
Sigma Xi, The Scientific Research Society, Distinguished Lecturer, 2013
Forum for the History of Science in America, Distinguished Lecturer, 2012
University of Maine, Geddes Simpson Memorial Lecturer, 2012 and Phi Beta Kappa Lecturer, 2008
Colorado State University, Atmospheric Science, 50th Anniversary Banquet Speaker, 2012,
<http://www.atmos.colostate.edu/anniversary/video.php?name=banquetPart2>
Society for the History of Technology, Sally Hacker Book Prize, 2011
American Meteorological Society, Louis J. Battan Author's Award, 2011

MIT/Woods Hole Oceanographic Institute, H. Burr Steinbach Visiting Scholar, 2011
 Royal Meteorological Society, Keynote Speaker, 150th Anniversary Meeting, 2011
 Maine Congress of Lake Associations, Keynote Speaker, 2011
 Chemical Heritage Foundation, Gordon Cain Conference Fellow, 2010-11
 U.S. House Committee on Science and Technology, testimony on geoengineering, Nov. 2009
 NASA 50th Anniversary Lecturer, Washington, DC, Oct. 2008
 Intergovernmental Panel on Climate Change, Contributing Author, 2007
 Royal Meteorological Society, Gordon Manley Lecturer, Durham, UK, 2007
 Woodrow Wilson International Center for Scholars, Public Policy Scholar, 2006-07
 AAAS Roger Revelle Fellow in Global Stewardship, 2006-07
 U.S. National Academy of Sciences, Visiting Scholar, 2006-07
 Smithsonian National Air and Space Museum, Charles A. Lindbergh Chair in Aerospace History, 2005-06; Exploring Space Lecturer, 2006
 University of Rhode Island, Vetelsen Distinguished Lecturer in Oceanography, 2004
 Scripps Institution of Oceanography, William E. and Mary B. Ritter Memorial Fellowship, 2003
 NSF Scholar's Award, "Carbon Dioxide Theory of Climate Change," 2001-05
 Mellon Foundation Grant, Environmental studies of the Southern Hemisphere, 2000-05
 Center for Theology and the Natural Sciences, Science and Religion Award, 2002
 George Mason University, ECHO Project Grant, Center for History and New Media, 2001
 StudyWeb Academic Excellence Award for *Guide to Historical Resources*, 2001
 Harvard University, Visiting Scholar, Dept. of the History of Science, 1999-2000
 Sloan Foundation Grant, History of Geophysics on the Web, 1998-99
 University of Arizona, Fellow, Institute for the Study of Planet Earth, 1997
 Epsilon Pi Tau, International Honorary for Professions in Technology, 1997
 Pennsylvania State University, Visiting Professor of Global Change, 1994
 American Institute of Physics, Historical Research Grant, 1994
 Massachusetts Institute of Technology, Visiting Scholar, STS Program, 1992-94
 Harvard University, Research Associate, History of Science, 1992-93
 National Endowment for the Humanities Sabbatical Fellowship, 1992-93
 Yale University, Frederick W. Beinecke Fellow, 1992
 American Philosophical Society Library, Mellon Fellow, 1991
 Colby College, Research and Course Development Grants, 1988-2011
 American Meteorological Society, Grant for Historical Research, 1986-88
 Smithsonian Institution, Fellow, Joseph Henry Papers, 1985-87
 Colorado State University, Graduate Research Assistantship, 1971-73
 Multiple Sclerosis Society, Undergraduate Scholarship, 1968-71
 Bausch-Lomb Science Award, 1967
 Rensselaer Polytechnic Institute Science Award, 1967

EDITORSHIPS

Palgrave Studies in the History of Science and Technology, series editor,
<http://www.palgrave.com/us/series/14581#>
Bulletin of the American Meteorological Society, <https://journals.ametsoc.org/bams>
Endeavour, Editorial Advisory Board, <https://www.journals.elsevier.com/endeavour/>
Histories, Editorial Board, <https://www.mdpi.com/journal/histories>

BIOGRAPHICAL

Pennsylvania Center for the Book, https://pabook.libraries.psu.edu/literary-cultural-heritage-map-pa/bios/Fleming_James_Rodger; *Marquis Who's Who* (2001-20); *Writers Directory*; *Contemporary Authors*; *Dictionary of International Biography*.

LIST OF PUBLICATIONS

BOOKS – Amazon Home Page, <http://amzn.to/pKFzbn>

- FIRST WOMAN: Joanne Simpson and the Tropical Atmosphere*. Oxford: Oxford University Press, 2020.
- Inventing Atmospheric Science: Bjerknes, Rossby, Wexler, and the Foundations of Modern Meteorology*. Cambridge, MA: MIT Press, 2016; paper 2018.
- Fixing the Sky: The Checkered History of Weather and Climate Control*. New York: Columbia University Press, 2010. Winner of the 2011 Sally Hacker Prize from the Society for the History of Technology and the Louis J. Battan Author's Award from the American Meteorological Society. Paperback edition and E-book 2011. Japanese edition, Shinobu Onizawa, transl. Tokyo: Kinokuniya, 2012. See <https://www.youtube.com/watch?v=Rr9KVHGOmAc>
- The Callendar Effect*. The life and work of Guy Stewart Callendar (1898-1964), the scientist who established the carbon dioxide theory of climate change. Boston: American Meteorological Society, 2007. CHOICE Award, best book in the history of meteorology from the Atmospheric Science Librarians International; EXCEL Gold book award from the Society of National Association Publishers.
- Historical Perspectives on Climate Change*. New York: Oxford University Press, 1998; Paperback edition, 2005.
- Meteorology in America, 1800-1870*. Baltimore: Johns Hopkins University Press, 1990; Paperback edition, 2000.

IN PROGRESS

Big History: Critique and Counterproposal

EDITIONS

- Climate Intervention: Reflecting Sunlight to Cool Earth*. Washington, D.C.: National Research Council of the National Academies. 2015.
- Climate Intervention: Carbon Dioxide Removal and Reliable Sequestration*. Washington, D.C.: National Research Council of the National Academies, 2015.
- Toxic Airs: Body, Place, Planet in Historical Perspective*, James Rodger Fleming and Ann Johnson, eds. Pittsburgh: University of Pittsburgh Press, 2014.
- Klima. Osiris 26*, James Rodger Fleming and Vladimir Jankovic, eds. Chicago: University of Chicago Press, 2011.
- Globalizing Polar Science: Reconsidering the International Polar and Geophysical Years*. Roger D. Launius, James Rodger Fleming, and David H. DeVorkin, eds. New York: Palgrave, 2010.
- Earth Observations from Space: The First 50 Years of Scientific Achievements*. Washington, DC: National Research Council, 2008.
- Climate Change and Anthropogenic Greenhouse Warming: A Selection of Key Articles, 1824-1995, with Interpretive Essays*, James Rodger Fleming, ed. National Science Foundation, National Science Digital Library, *Classic Articles in Context*, Issue 1. April 2008. <http://bit.ly/15CTWnT>
- Intimate Universality: Local and Global Themes in the History of Weather and Climate*, James Rodger Fleming, Vladimir Jankovic, and Deborah R. Coen, eds. Sagamore Beach, MA: Science History Publications/USA, 2006, http://www.shpusa.com/shp_books/intimate-universality/
- History of Meteorology*, ISSN 1555-5763 James Rodger Fleming, Editor-in-Chief. <http://www.meteohistory.org>.
- The Papers of Guy Stewart Callendar*. James Rodger Fleming and Jason Thomas Fleming, eds. Boston: AMS Books, 2007, <https://archiveshub.jisc.ac.uk/search/archives/47f8b97b-79b0-3d39-84b4-fffcae3f6e6?terms=callendar>
- Weathering the Storm: Sverre Petterssen, the D-Day Forecast and the Rise of Modern Meteorology*, by Sverre Petterssen. James Rodger Fleming, ed. Boston: American Meteorological Society, 2001.

- Historical Studies in the Physical and Biological Sciences* 30, no. 2 (2000), James Rodger Fleming, ed.
- Studies in the History and Philosophy of Modern Physics* 31B, no. 3 (2000), Naomi Oreskes and James Rodger Fleming, eds.
- History of the Clean Air Act: A guide to clean air legislation past and present* (with Bethany R. Knorr). Interactive History of the Earth Sciences Project. Boston: American Meteorological Society 1998. URL: <https://www.ametsoc.org/sloan/cleanair/>
- Guide to Historical Resources in the Atmospheric Sciences*, James Rodger Fleming, ed. Revised Web edition, 1997. URL: <http://www.colby.edu/sts/97guide/> Boulder: National Center for Atmospheric Research, 1989. NCAR/TN-327+IA.
- Historical Essays on Meteorology, 1919-1995*. The 75th Anniversary Volume of the American Meteorological Society, James Rodger Fleming, ed. Boston: American Meteorological Society, 1996. E-book, <http://www.springer.com/us/book/9781940033846>
- Science, Technology and the Environment: Multidisciplinary Perspectives*. James Rodger Fleming and Henry A. Gemery, eds. Akron: University of Akron Press, 1994.
- International Bibliography of Meteorology: From the Beginning of Printing to 1889*. 4 vols. In one. James Rodger Fleming and Roy E. Goodman, eds. Upland, Pa.: Diane, 1994.

PEER-REVIEWED ARTICLES AND ESSAYS

- “Terraforming Planets, Geoengineering Earth,” in *Nature Remade: Engineering Life, Envisioning Worlds*, Luis Campos, Michael R. Dietrich, Tiago Saraiva, and Chris Young, eds. Chicago: University of Chicago Press, in press.
- “Into the Clouds with Joanne Simpson,” 91-103 in *Silver Linings: Clouds in Art and Science*, Dolly Jorgensen and Finn Arne Jorgensen, eds. Trondheim, Norway: Museumsforlaget, 2020.
- “Civilization, Climate, and Ozone: Ellsworth Huntington’s ‘Big’ Views on Biophysics, Biocosmics, and Biocracy,” In *Weather, Climate and the Geographical Imagination*, Martin Mahoney and Samuel Randalls, eds. Pittsburgh: University of Pittsburgh Press, 2020.
- “Post-scripting extreme weather: Textuality, eventhood, resilience” (with Vladimir Janković). Pp. 154-165 in *Cultural Histories, Memories and Extreme Weather*, Georgina H. Endfield and Lucy Veale, eds. London and New York: Routledge, 2018.
- “In the Year 2017: A Soviet Fantasy of the Future,” in *Relocating Meteorology, History of Meteorology* 8 (2017): 222-224, with associated video, <http://meteohistory.org/scholarship/history-of-meteorology/history-of-meteorology-volume-8-2017>
- “Carl-Gustaf Rossby: Theorist, institution builder, bon vivant,” *Physics Today* 70 (2017): 50-56. <http://physicstoday.scitation.org/doi/full/10.1063/PT.3.3428>
- “Excuse Us, While We Fix the Sky: WEIRD Supermen and Climate Engineering,” 23-28 in *Men and Nature: Hegemonic Masculinities and Environmental Change*, edited by Sherilyn MacGregor and Nicole Seymour. *Perspectives*, Issue 2017, no 4. Munich: Rachel Carson Center. <http://www.environmentandsociety.org/perspectives/2017/4/article/excuse-us-while-we-fix-sky-weird-supermen-and-climate-engineering>
- “Intervention: *Kebnekaise*,” Introductory essay for *The Freeze*, a gallery installation and exhibit catalogue by Mats Bigert and Lars Bergström, Stockholm, Sweden, Jan. 2016.
- “Weather and Climate as Shape-Shifting Nouns: Gordian Knots of Understanding and Prevision,” *History of Meteorology* 7 (2015): 1-13; also (in Chinese) Pp. 1-10 in *Proceeding of the Second Symposium on the History of Meteorological Science and Technology*, Xiaofeng Xu ed. Beijing: China Meteorological Press, 2017.
- “Visual cultures of the Anthropocene: Imag(e)ing technocultures of the future in light of the past,” 39-41. *Proceedings of the international conference, Global Environmental Images: New Perspectives*, Sebastian Grevsmühl, ed. (English and French). Paris: GIS Climate-Environment-Society, 2015.
- “The Checkered Past of Weather and Climate Control and Its Troubling Prospects, 171-180.” *Klimagerechtigkeit und Klimaethik*, Angela Kallhoff, ed. Vienna: Wiener Reihe, Themen der Philosophie. Berlin: De Gruyter, 2015.

- “The Future of Technology and Its Impact on the Environment.” In *Technology: Impacts, Challenges and the Future*, 171-201. Abu Dhabi, United Arab Emirates: The Emirates Center for Strategic Studies and Research, 2015. Published simultaneously in Arabic.
- “Climate, Change, History,” *Environment and History* 20 (2014): 577-586.
- “Carbon ‘Die’-Oxide: The personal and the planetary.” *Toxic Airs: Body, Place, Planet in Historical Perspective*, J.R. Fleming and A Johnson, eds. Pittsburgh: University of Pittsburgh Press, 2014, 251-270.
- “Climate Physicians and Surgeons.” *Environmental History* 19 (April 2014): 338-345.
- “A Brief History of Weather and Climate Control,” Washington Geoengineering Consortium, Jan. 2014, <http://www.youtube.com/watch?v=v7TBqqII6y4>
- “Picturing Climate Control: Visualizing the Unimaginable.” *Image Politics of Climate Change: Visualizations, Imaginations, Documentations*, Birgit Schneider and Thomas Nocke, eds. Bielefeld: [transcript] Verlag, 2014, 345-361.
- “The Artificial Production of Carbon Dioxide and Its Influence on Temperature” (1938) by G.S. Callendar, with commentary. *The Future of Nature: Documents of Global Change*, Libby Robin, Sverker Sörlin, and Paul Warde, eds. New Haven: Yale University Press, 2013, <http://www.yalebooks.com/yupbooks/book.asp?isbn=9780300184617>
- “Skyscapes and Anti-Skyscapes: Making the Invisible Visible.” *The Anti-Landscape*, David Nye and Sarah Elkund, eds. Amsterdam: Rodopi, 2013, 29-44.
- “A History of Weather and Climate Control.” Opinion Article, *Geoengineering Our Climate Working Paper and Opinion Article Series*. Available at: <http://wp.me/p2zsRk-9i>
- “The Climate Engineers: Playing God to Save the Planet.” *Landscape Futures: Instruments, Devices and Architectural Inventions*, Geoff Manaugh, ed. Barcelona and New York: Actar and Reno, Nevada Museum of Art, 2013.
- “Will Geo-engineering Bring Security and Peace? What does history tell us?” *Geoengineering: An Issue for Peace and Security Studies. Sicherheit und Frieden / Security and Peace*, (2012), Issue 4, <http://www.sicherheit-und-frieden.nomos.de/1/current-issue-and-archive/2012/issue-4/>
- “Iowa Enters the Space Age: James Van Allen, Earth’s Radiation Belts, and Experiments to Disrupt Them.” *Annals of Iowa* 70 (Fall 2011), 301-24; available in America: History & Life with Full Text, and at <https://ir.uiowa.edu/annals-of-iowa/vol70/iss4/2/>
- “Beyond Prediction to Climate Modeling and Climate Control: New perspectives from the papers of Harry Wexler, 1945-1962.” *The Development of Atmospheric General Circulation Models*, Leo Donner, Wayne Schubert, Richard Somerville, eds., 51-75. Cambridge University Press, 2011.
- “Planetary-scale Field Work: Harry Wexler on the possibilities of ozone depletion and climate control.” *Knowing Global Environments: New historical perspectives on the field sciences and the multiple scales of nature*, Jeremy Vetter, ed., 190-211. New Brunswick: Rutgers University Press, 2010.
- “Earth Observations from Space: Accomplishments, challenges, and realities.” *NASA’s First 50 Years: An Historical Perspective*, Steven J. Dick, ed., 543-562. Washington, DC: NASA, 2010.
- “Polar and Global Meteorology in the Career of Harry Wexler, 1933-1962.” *Globalizing Polar Science: Reconsidering the International Polar and Geophysical Years*, Roger D. Launius, James Rodger Fleming, and David H. DeVorkin, eds., 225-241. New York: Palgrave, 2010.
- “Gilbert N. Plass: Climate Science in Perspective.” *American Scientist* 98 (2010): 60-61.
- “Climate, History, Society, Culture: An editorial essay,” *Wiley WIRE Climate Change* (Feb. 2010), DOI: 10.1002/wcc.35
- “Fixing the Sky: Rain kings and climate engineers.” *Weather, Local Knowledge and Everyday Life: Issues in Integrated Climate Studies*, Vladimir Jankovic and Christina Barboza, eds. Rio de Janeiro: MAST, 2009.
- “Advancing Polar Research and Communicating Its Wonders: Quests, questions, and capabilities of weather and climate studies in international polar years,” (with Cara Seitchek). *Smithsonian at the Poles: Contributions to International Polar Year Science*, I. Krupnik, M. A. Lang, and S. E. Miller, eds., 1-12. Washington, D.C.: Smithsonian Institution Scholarly Press, 2009.

- “Earth Observations from Space: The first two decades.” *Earth Observations from Space: The First 50 Years of Scientific Achievements*. Washington, DC: National Research Council, 2008, 14-27.
- “The Climate Engineers: Playing God to Save the Planet.” *Wilson Quarterly* (Spring 2007): 46-60. <http://www.colby.edu/sts/climateengineers.pdf>
- “Global Climate Change and Human Agency: Inadvertent influence and 'Archimedean' interventions.” *Intimate Universality: Local and Global Themes in the History of Weather and Climate*, J.R. Fleming, V. Jankovic, and D.R. Coen, eds. Sagamore Beach, Mass.: Science History Publications/USA, 2006. pp. 223-248. http://www.colby.edu/sts/06_fleming_archimedean.pdf
- “The Pathological History of Weather and Climate Modification: Three cycles of promise and hype.” *Historical Studies in the Physical Sciences* 37, no. 1 (2006): 3-25. http://www.colby.edu/sts/06_fleming_pathological.pdf
- “Climate Dynamics, Science Dynamics, and Technological Dynamics, 1804-2004.” *From Beaufort to Bjerknes and Beyond – Critical perspectives on observing, analyzing, and predicting weather and climate*, S. Emeis and C. Lüdecke, eds. München: Rauner, 2005. Special issue of *Algorismus* 52 (2005): 9-16.
- “James Croll in Context: The encounter between climate dynamics and geology in the second half of the nineteenth century.” *Milutin Milankovic Anniversary Symposium: Paleoclimate and the Earth climate system, Belgrade, 30 August - 2 September 2004: invited lectures*. A. Berger, M. Ercegovac, and F. Mesinger, eds., 11-18. Belgrade: Serbian Academy of Sciences and Arts, 2005.
- “Distorted Support: Pathologies of Weather Warfare.” *Science in Uniform, Uniforms in Science: Historical Studies of American Military and Scientific Interactions*, Margaret Vining and Barton C. Hacker, eds., 49-60. Lanham, Md.: Scarecrow Press, 2007.
- “Telegraphing the Weather: Military Meteorology, Strategy, and ‘Homeland Security’ on the American Frontier in the 1870s.” *Instrumental in War: Science, Research, and Instruments. Between Knowledge and the World*, History of Warfare Series, vol. 28. Steven A. Walton, ed., 153-78. Leiden: Brill Academic, 2005.
- “Fixing the Weather and Climate: Military and Civilian Schemes for Cloud Seeding and Climate Engineering.” *The Technological Fix: How people use technology to create and solve problems*, Lisa Rosner, ed., 175-200. Hagley Center Studies in the History of Business and Technology. New York: Routledge, 2004. http://www.colby.edu/sts/04_fleming_fixing.pdf
- “Sverre Petterssen and the contentious (and momentous) weather forecasts for D-Day.” *Endeavour* 28 (June 2004): 59-63. <http://authors.elsevier.com/sd/article/S0160932704000511>
- “Sverre Petterssen, the Bergen School, and the Forecasts for D-Day.” *History of Meteorology* 1 (2004): 75-83. <http://www.meteohistory.org>
- “Global Environmental Change and the History of Science.” *Cambridge History of Science*, vol. 5, *The Modern Physical and Mathematical Sciences*, Mary Jo Nye, ed., 634-50. Cambridge: Cambridge University Press, 2003.
- “Global Climate Change and the History of Science.” *Proceedings of the International Symposium for the East Asian Network on Environmental History and Climate Change: The Encounter Between Meteorology and History*, Togo Tsukahara, ed., 91-101. Kobe University: Japan, 2003 (In Japanese).
- “La météorologie, les Indiens et les grévistes: L’art de surveiller à la fois l’atmosphère et les troubles sociaux.” *La Recherche*. Paris, no. 7 (April/June 2002): 80-83. Simultaneously published in *Mundo Científico* (Spanish edition).
- “What’s Up with the Weather?” Historical introduction for documentary film and website produced by The Johns Hopkins University and National Video Resources, 2003.
- “Science: Revolutionary War to World War I.” *Oxford Companion to United States History*, Paul Boyer, ed., 686-688. New York: Oxford University Press, 2001.
- “Storms, Strikes, and Surveillance: The U.S. Army Signal Office, 1861-1891.” *Historical Studies in the Physical and Biological Sciences* 30, no. 2 (2000): 315-32.

- “T.C. Chamberlin, Climate Change and Cosmogony.” *Studies in the History and Philosophy of Modern Physics* 31B, no. 3 (2000), 293-308.
- “Why Geophysics?” (with Naomi Oreskes). *Studies in the History and Philosophy of Modern Physics* 31B, no. 3 (2000).
- “Joseph Fourier, the ‘Greenhouse Effect,’ and the Quest for a Universal Theory of Terrestrial Temperatures.” *Endeavour* 23 (1999): 72-75.
- “Arrhenius and Current Climate Concerns: Continuity or a 100-year Gap?” *EOS, Transactions of the American Geophysical Union* 79, no. 34 (Aug. 25, 1998): 405, 409-10. Reprinted in *Earth in Space* (Nov. 1998): 11-14.
- “Charles Lyell and Climatic Change: Speculation and Certainty.” *Lyell: The past is the key to the present*, D.J. Blundell and A.C. Scott, eds., 161-169. Geological Society Special Publication no. 143. London, 1998.
- “Meteorological Observing Systems Before 1870 in England, France, Germany, Russia, and the USA: A Review and Comparison.” *World Meteorological Organization Bulletin* 46 (1997): 249-58.
- “Science and Technology in the Second Half of the Nineteenth Century.” *The Gilded Age: Essays on the Origins of Modern America*, Charles Calhoun, ed., 19-37. Wilmington, Del.: Scholarly Resources, 1996.
- “Historical Writing on Meteorology: An Annotated Bibliography,” (with Simone L. Kaplan). *Historical Essays on Meteorology, 1919-1995*, James Rodger Fleming, ed., 557-580. Boston: American Meteorological Society, 1996.
- “The Signal Office and the *Bibliography of Meteorology*.” *International Bibliography of Meteorology: From the Beginning of Printing to 1889*. James Rodger Fleming and Roy E. Goodman, ed., xiii-xxii. Upland, Penna.: Diane Publishing Co., 1994.
- “T.C. Chamberlin and H₂O Climate Feedbacks: A Voice from the Past.” *EOS, Transactions of the American Geophysical Union* 73 (1992): 505, 509. Reprinted in *Earth in Space* 5 (Nov. 1, 1992): 11.
- “Meteorology at the Smithsonian Institution, 1847-1874: The Natural History Connection.” *Archives of Natural History* 16 (1989): 275-84.
- “Radiative Effects of Cirrus Clouds,” (with Stephen K. Cox). *Journal of the Atmospheric Sciences* 31 (1974): 2182-88.
- “Radiative Effects of Cirrus Clouds.” Technical Report TR-207. Fort Collins: Colorado State University Department of Atmospheric Science, 1973.

ENCYCLOPEDIA ARTICLES

- “Geoengineering.” *Berkshire Encyclopedia of Sustainability*, Vol. 10, *The Future of Sustainability*, Bill Siever, ed. Great Barrington, Mass.: Berkshire, 2012, 124-128.
- Encyclopedia of Climate and Weather*, 2nd ed., New York: Oxford University Press, 2010. “James Croll.”
- New Dictionary of Scientific Biography* (Scribner’s, 2007). “Guy Stewart Callendar,” and “Verner E. Suomi.”
- Oxford Encyclopedia of Maritime History*, 2006. “Meteorology” and “Meteorological Departments and Institutes.”
- Dictionary of American History*, 10 vols., Stanley I. Kutler, ed. New York: Charles Scribner’s Sons, 2003. “Climate” and “Meteorology.”
- A History of Modern Science and Mathematics*, Vol. 3, Brian S. Biagre, ed. New York: Scribner’s, 2002. “Meteorology,” 184-217.
- The History of Science in the United States: An Encyclopedia*, Marc Rothenberg, ed. New York: Garland Press, 2001. “James Pollard Espy,” “Medicine and Weather,” “Meteorology and Atmospheric Science,” “National Weather Service,” “William C. Redfield.”

- American National Biography*, John A. Garraty and Mark C. Carnes, ed. New York: Oxford University Press, 1999. “Cleveland Abbe,” “Jule Gregory Charney,” “James Henry Coffin,” “James Pollard Espy,” “John Locke,” “Elias Loomis,” “Albert James Myer,” “Francis Wilton Reichelderfer.”
- Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, Gregory A. Good, ed. New York and London: Garland Publishing, 1998. “Climate Change before 1940,” “Greenhouse Effect,” “Meteorological Observing Systems: Early History,” “Meteorological Services: National and Regional,” “Weather Modification.”
- Instruments of Science: An Historical Encyclopedia*, Robert Bud and Deborah Warner, ed. New York: Garland Press, 1997. “Nepheloscope.”
- Encyclopedia of Earth Sciences*, 2 vols., E. Julius Dasch, ed. New York: Macmillan Reference, 1996. “History of Meteorology.”
- Nobel Prize Winners*, Tyler Wasson, ed. New York: H. W. Wilson Company, 1987. “Francis Aston,” “Albert Einstein,” “Richard Feynman,” “Irving Langmuir,” “Walther Nernst,” “Julian Schwinger,” “Frederick Soddy,” “Sin-itiro Tomonaga.”
- “Jule Gregory Charney (1917-1981),” Biographical Sketch, American Geophysical Union, <http://www.agu.org/inside/awards/charney.html>

RECENT CONFERENCES CONVENED

- “Pressing Issues: History of Technology Meets Public Policy,” Colby College, 2013.
- “Gaining It, Losing It, Regaining It (?): Anxiety and Authority in the Atmospheric Sciences,” International Congress of History of Science, Technology and Medicine, Manchester, UK, 2013 will be published in *History of Meteorology* 6 (2014).
- Chemical Weather and Chemical Climate 2011, supported by Chemical Heritage Foundation resulted in *Toxic Airs*, published 2014.
- Climate and Cultural Anxiety 2009, supported by NSF resulted in *Osiris* 26, *Klima* (2011).

MEDIA COVERAGE

- BBC Radio*, interview with Ronan Breen for a new podcast on the science, history, and human stories behind the weather, Aug. 2017 and Mar. 2018.
- 99% Invisible – podcast on weather control with Vivian Le, Jan. 2018, <https://99percentinvisible.org>
- Smithsonian Magazine*, Interview with Katie Nodjimbadem on rainmaking in the 19th Century, July 2017.
- Discovery.com, interview with Crystal Lewis Brown on storms and weather control, 2017
- AAAS Science and Technology Policy Fellows Newsletter, interview with Kathleen O’Neil on the Roger Revelle Fellowship in Global Environmental Policy, 2017
- TV Channel “Russia 24,” Moscow, interview with Alex Knyazev on geoengineering, July 7, 2017.
- Interview on weather control with Sofia Hedmana journalist with the *Barometern*, a daily in the south east of Sweden, 2017.
- Time Magazine*, Dec. 21, 2016.
- “Oysters, beer, and a meteorological breakthrough,” *Boston Globe*, April 17, 2016,
- “A Conversation with Dr. James Fleming: Geoengineering and the History of Atmospheric Science,” Georgetown University Climate History Podcast with Dagomar Degroot, March, 2017
- Toronto Star*, interview with Joseph Hall on geoengineering.
- The Adaptors* podcast –with Flora Lichtman on human engineering and geoengineering.
- Schattenblick*, interview on Klimarunde, Fragestunde - Hoffnung im Verborgenen.
- [MSNBC dotcom live web show on geoengineering](#) with host Tony Dokoupil. Oct. 29, 2014,
- Discover Magazine*, interview with Douglas Fox.
- Public Radio Exchange (PRX), interview with Stephen Jackson.
- Popular Science Magazine* with Lois Parshley.
- Aspen Public Radio.
- BioScience* with Beth Baker.

Washingtonian Magazine with Rebecca Nelson.
 Voice of America, with Michael Fussel.
 BBC Radio with Deborah Cohen.
Hartford Courant with Steve Grant.
Los Angeles Times with Evan Halper.
Los Angeles Times.
 KABC (AM 790) on the Doug McIntyre Show.
 National Public Radio, Digital News with Linton Weeks.
 NBC News with Tony Dokoupil.
The Weather War. Mats Bigert and Lars Bergström. Stockholm: Ginestra Film, 2012,
<http://vimeo.com/52955284>, password pudov. On-screen appearance and script consulting.
Climate Wire, with Lauren Morello, Moving NOAA to Department of Interior.
Climate Nexus interview with Marlene Cimon on extreme weather events.
Climate Wire interview with Mollie Bloudford-Indelicato on the weaponization of weather.
Le Parisien Magazine, interview on Geoengineering with Thomas Leroy,
Guardian, UK interview with John Vidal on hurricane modification.
Le Monde, Paris interview with Audrey Garric on environmental warfare.
 WRTC-Pittsburgh, “Fixing the Sky” and climate
<http://www.remappingdebate.org/audio/%E2%80%9Cfixing-sky%E2%80%9D-and-climate>
 Discovery Channel, Inventions that Shook the World.
 National Public Radio, All Things Considered with Amy Standen.
 National Public Radio All Things Considered with Robert Krulwich,
<http://www.npr.org/sections/krulwich/2010/07/01/128170775/a-very-scary-light-show-exploding-h-bombs-in-space>
Scientific American, Feb. 25, 2011, “Ask the experts.”
 Australian Broadcasting Corporation, Late Night Live, with Philip Adams.
 Canadian Broadcast Corporation, History of weather forecasting.
Walrus Magazine, Toronto, with John Lorinc.
 Newstalk Radio, Ireland, with Sean Moncrieff.
 American Historical Association/ Natl. History Center, New Books in History with Marshall Poe.
Galileu, Brazillian magazine of science, technology, and culture, with Felipe Pontes in *Galileu*,
Walrus Magazine, Toronto, with John Lorinc.
 Netherlands Public Radio
 National Public Radio, International Geophysical Year.
 National Science Foundation Research Channel. Climate Change History.
 Australian Broadcasting Corporation, National Radio, The Climate Engineers.
 British Broadcasting Corporation. *The Science of Superstorms: Playing God with the weather*.
 4th Row Films, New York, NY. *Owning the Weather*.
 The Weather Channel, 100 Biggest Moments in Weather History.
 Wilson Center Dialogue, The Climate Engineers.
 WOR Radio, New York City, Weather and Climate Control.
 NewsHour with Jim Lehrer, Polar science.
 Progressive Radio Network, “Climate Engineering.
Wall Street Journal Online. “Could Global Warming Be Halted by Controlling the Weather?
Boston Globe. Talk of manipulating Earth's climate.
 Serbian National Television, James Croll and Milutin Milankovic’ in Historical Context, 2004.
Los Angeles Times. “An Ill Wind Blows Toward an Even More Inhospitable Climate.”
National Public Radio, “A Historian Looks at Weather Modification.”
Old Farmer’s Almanac, “A Spicy Account of (Quite Possibly) the Worst Day in Weather History.”
Cabinet: A quarterly magazine of art and culture. “Yesterday’s Forecasts.”

Weather Notebook, Mount Washington Observatory. Multiple NPR Radio scripts.
The Learning Channel (TLC), “Understanding Weather.”

LECTURES: KEYNOTE (K), INVITED (I), CONTRIBUTED (C)

- (I) “Terraforming Planets, Geoengineering Earth,” AAAS Meeting, Seattle, WA, Feb. 2020.
- (C) “Meteorology and the Federal Patron: Interactions Before AMS and Before NSF,” American Meteorological Society Annual Meeting, Boston, MA, Jan. 2020.
- (K) “One Hundred Years of Research Challenges and Accomplishments,” International Association of Meteorology and Atmospheric Science, Montreal, Canada, July 2019,
<https://www.youtube.com/watch?v=-pOoUgOQBWk> (first 30 minutes)
- (I) “Fixing the Clouds,” Cloud Appreciation Society Sky Gathering, Island of Lundy, North Devon, England, May 2019.
- (I) “A Fraught History of a Finite Planet: Problems and Prospects of ‘Big History’” The Right Use of the Earth: Knowledge, Power, and Duties in a Finite Planet, École normale supérieure, Paris, June 2018.
- (I) “The Possibilities and Pitfalls of Big History (AKA Big History Meets the History of Science): A Roundtable Discussion,” Sponsored by the National History Council, American Historical Association, Washington, DC, Jan. 2018.
- (K) “Gordian Knots of Prevision: Atmospheric research in the first half of the twentieth century,” Southern History of Science and Technology Conference (SoHost), Mississippi State University, March 2018.
- (C) “Climate intervention: new and emerging opportunities in STS,” European Association for the Study of Science and Technology Lancaster, UK, July 2018.
- (I) “What we are learning about the life and work of Joanne Gerould/Starr/Malkus/Simpson,” American Meteorological Society annual meeting, Austin, TX, Jan. 2018.
- (K) *Tyndall History of Global Environmental Change Lecture* sponsored by the Global Environmental Change Focus Group at the American Geophysical Union, New Orleans, December 2017.
- (I) “Gordian Knots of Prevision: The lessons of history.” National Center for Atmospheric Research, Boulder, Colorado, Oct. 2017.
- (I) “Breaking Through the Clouds: Joanne Simpson and the tropical atmosphere.” University of Maryland, Baltimore, Sept. 2017; Colorado State University, Fort Collins, Oct. 2017; Colby College, March, 2018.
- (I) “Vilhelm Bjerknes, Complexity, and the Gordian Knots of Meteorology,” History of Science Society Annual Meeting, Toronto, Nov. 2017.
- (I) MIT on Chaos and Climate: A Centenary Celebration of Jule Charney and Ed Lorenz, Jan. 2018.
- (I) Seminar Leader, Woods Hole Marine Biological Laboratory – Arizona State University, “A Century of Engineering Life: Populations and Ecosystems,” May 2018.
- (K) “Historical Perspectives on Climate Change and Climate Intervention,” Cambridge, MA: American Academy of Arts and Sciences, May 2017.
- (I) “Fortune, Luck, and Fate: Atmospheric Maintenance in History and Culture,” Fate, Luck and Fortune: Historical Narratives of Environmental Risk, University of Nottingham, March 2017, video here,
<https://www.nottingham.ac.uk/classics/research/projects/fate-luck-fortune.aspx>
- (K) “Fixing the Sky: History and Current Policy,” Connections keynote lecture at University of New England, Biddeford, March 2017.
- (I) “A Passion for Clouds: Joanne Simpson and the Tropical Atmosphere,” American Meteorological Society annual meeting, Seattle, Jan. 2017.
- (I) “Climate Intervention: Barking mad, WEIRD, and male dominated,” Higher seminar at Linköping University, Sweden, Jan. 2017.
- (I) “Apollo’s Inner Eye: Establishing privileged climate positions, 1750-2000,” Conference on “From Above,” Swedish Royal Academy of Sciences, Stockholm, Jan. 2017.

- (I) “Inventing Atmospheric Science: Gordian Knots and the Quest for Prevision,” PAOC Colloquium, MIT, Nov. 2016
- (I) “Inventing Atmospheric Science: Gordian Knots and the Quest for Prevision,” History of Science Colloquium, University of Minnesota, Sept. 2016.
- (I) “Climate Intervention: Barking Mad, WEIRD, and Male-Dominated Disasters,” Washington University of St. Louis, Sept. 2016.
- (I) “Technological Fixes and the Grand Challenge of Climate Change,” Perspectives on Modernity Seminar, Forum Internationale Wissenschaft, University of Bonn, Germany, July 2016.
- (I) “Civilization, Climate and Ozone: Ellsworth Huntington’s Views on Biophysics, Biocosmics, and Bocracy,” Workshop on History of Science meets Historical Geography, Nottingham, UK, July 2016
- (I) “A Big Picture History of Atmospheric Science in the Twentieth Century: Vilhelm Bjerknes, C.-G. Rossby, and Joanne Simpson,” with Maya Meltsner, NASA Goddard Spaceflight Center, June 2016.
- (C) “Weather and Climate Anti-skyscapes and Anti-soundscapes: Artistic, scientific, and public engagements,” Royal Anthropological Institute, Conference on Anthropology and Climate Change, London, May 2016.
- (C) “Atmospheric Maintenance: Temporal and spatial considerations,” Conference on The Maintainers, Stevens Institute of Technology, Hoboken, NJ, April 2016.
- (I) “Inventing Atmospheric Science: Issues of Scale and the Quest for Prevision” Center for Science & Society, Columbia University, April 2016.
- (I) “Inventing Atmospheric Science: Gordian Knots and the Quest for Prevision,” Colby Admissions Department Open House, April 2016.
- (I) “Climate Engineering: Barking Mad, WEIRD, and Male-Dominated,” Workshop on Men and Nature: Gender, Power, and Environmental Change. Rachel Carson Center for Environment and Society, Munich, Germany, Feb. 2016.
- (I) “Inventing Atmospheric Science,” Book Launch, American Meteorological Society Headquarters, Boston, Jan. 2016. Also at Old Professors Bookshop, Belfast, Colby Bookstore and Waterville Public Library.
- (K) “History of Meteorology,” Core Science Talk, American Meteorological Society, New Orleans, Jan. 2016. <https://ams.confex.com/ams/96Annual/videogateway.cgi/id/31508?recordingid=31508>
- (I) Pressing Issues: History Meets Public Policy Roundtable, American Historical Association, Atlanta, GA, Jan. 2016.
- (I) Conference on the History of Meteorological Science and Technology, Chinese Society for the History of Science and Technology, Beijing, China, Dec. 2015. “Inventing Atmospheric Science,” “Historical Perspectives on Climate Change,” “Meteorology in America,” and “Fixing the Sky.” A series of four invited lectures on the history of meteorology and climatology.
- (I) Session Chair: “Science and the State: Public Policy, Promotion, and State Support for Science in the Twentieth Century,” History of Science Society, San Francisco, CA, Nov. 2015.
- (I) “Cutting the Gordian Knot of Meteorology: New Theories, New Technologies, and New Knots,” History of Science Society, San Francisco, CA, Nov. 2015.
- (I) “How Studying the Past Can Make a Difference to the Future: How To Engage with Government and Beyond Using the History of Science,” Joint Caucus for Socially Engaged Philosophers and Historians of Science (JCSEPHS), History of Science Society, San Francisco, CA, Nov. 2015.
- (I) “Cutting the Gordian Knot of Meteorology: New Technologies and New Knots,” Society for the History of Technology, Albuquerque, NM, Oct. 2015.
- (I) “Inventing Atmospheric Science: The Quest for Prevision and the Gordian Knots of Meteorology,” Earth System Science Center, Pennsylvania State University, Oct. 2015.
- (I) “Sir Francis Bacon and the Scientific Revolution,” University of Maine, Orono, Sept. 2015.
- (C) “Human/Nature in the Anthropocene,” Arts and Humanities Laboratory Course and Seminar, Colby College, Sept. 2015.

- (I) “Everything is Unprecedented if You Don’t Study History,” Max Planck Institute, Hamburg, Germany, Sept. 2015.
- (I) “Everything Atmospheric, Everywhere, Always: Mobility, innovation, and brick walls,” Congress of Historical Geographers, London, July 2015.
- (I) “Climate Change in History,” (Skype), History 410, University of Oregon, July 2015.
- (C) “Looking at Clouds—Then and Now,” Colby College Admissions Open House Program, July 2015.
- (K) “The Emergence of Atmospheric Science, 1900-1960,” Colorado State University Department of Atmospheric Science, Distinguished Alumnus Lecture, April 2015.
- (I) “Historical Perspectives on Intervention in the Atmospheric System: Cautionary Notes,” Climate Intervention: Albedo Modification, AAAS Annual Meeting, San Jose, CA, Feb. 2015.
- (I) Atmospheric Technoscience and the “Old” Climatology in the early to mid-20th century, Conference on meteorology and climate, Bergen, Norway, Nov. 2014.
- (K) “Historical perspectives on shape-shifting nouns: Climate, dynamics, models.” Keynote talk for *Models and Knowledge in Climate Sciences: Historical, Scientific and Philosophical Perspectives*, Rotman Institute of Philosophy Annual Conference, London, Ontario, Canada, Oct. 2014, <http://www.rotman.uwo.ca/new-video-posted-james-fleming-dynamic-climatology-historical-perspectives-on-shape-shifting-nouns>
- (I) “A New Look at Atmospheric Science and Technology: 1900-1960,” Departments of geography and history, University of South Carolina, Oct. 2014.
- (I) “*Everything Atmospheric, Everywhere, Always*” *A History of Atmospheric Research 1900-1960* Rutgers University, Department of Environmental Science, Rutgers University, Sept. 2014
- (C) *Entrepreneurs of Atmospheric Research, 1900-1960*, Faculty Forum, Colby College, Sept. 2014.
- (I) “Imagining Atmospheric Technoscience: Before, during and after the International Geophysical Year,” Conférence internationale, “Images environnementales globales: nouvelles perspectives,” GIS Climat-Environnement-Société, Paris, France, Oct. 2014.
- (I) “Metaphors and Images of Climate Control,” Climate Engineering in Popular Culture: Art, Media, Games, and Fiction, Climate Engineering Conference 2014: Critical Global Discussions. Berlin, Germany, Aug. 2014.
- (I) “Fixing Everything: Technology and the Interventionist Anthropocene,” Climate Engineering & Human Engineering. Social and Technological Challenges in the Anthropocene, Climate Engineering Conference 2014: Critical Global Discussions. Berlin, Germany, Aug. 2014.
- (I) “In Transit: From Meteorology to Atmospheric Science, 1900-1960.” Joint seminar with Centre for the History of Science, Technology, and Medicine and the Department of Atmospheric Science, Manchester, UK: University of Manchester; Royal Institute of Technology (KTH) Program in Environmental Humanities, Stockholm, Sweden; International Meteorology Institute, Stockholm University; Research Group on Health, Welfare and History of Science, University of Bergen. Bergen, Norway, March 2014.
- (I) “The Future of Technology and its Impact on the Environment,” Emirates Center for Strategic Studies and Research (ECSSR), 19th Annual Conference, “Technology: Impacts, Challenges and the Future,” Abu Dhabi, United Arab Emirates, Mar. 2014.
- (K) “Science, Technology, and Society: Looking backward to move forward.” Keynote Address, Farmington Forum Series, University of Maine at Farmington 150th Anniversary Celebration, Feb. 2014.
- (I) “Fixing the Sky,” Bigelow Laboratory for Ocean Sciences Seminar, East Boothbay Harbor, ME, Nov. 15, 2013.
- (I) “Artificial Clouds,” conference on Sensing Change: Mapping the Climatic Imaginary through Art, Science and History, Chemical Heritage Foundation, Philadelphia, PA, Nov., 2013.
- (K) “Convergence: Atmospheric Science, Technology, and Society, 1900-1960,” Sigma Xi Distinguished Lecture, Northwest Pennsylvania Chapter of Sigma Xi and Allegheny College, Oct. 2013.
- (K) “Fixing the Sky.” Inaugural Address of the Linda Hall Library’s Presidential Circle. Kansas City, Oct. 2013.

- (C) “Informed Sense of Place.” Workshop on Collecting the Future: Museums, Communities and Climate Change. Co-convened by the American Museum of Natural History and the National Museum of Australia, New York, Oct., 2013.
- (I) Capital Science Evening – “Blocking the Sun: Will Solar Geoengineering Research Increase or Decrease the Risk of Climate Change?” Carnegie Institution for Science, Washington, DC. Sept. 2013.
- (I) Vienna International Summer University, 4 lectures on history of climate change, the Intergovernmental Panel on Climate Change, and Climate Engineering, July 1-12, 2013, University of Vienna and Institute Vienna Circle, Vienna Austria.
- (C) International Congress of History of Science, Technology, and Medicine, Convener of 17 papers in 4 symposia sessions, “Gaining It / Losing It/ Regaining It (?) Argument, authority, and anxiety in the atmospheric sciences,” Manchester, UK, July, 2013.
- (K) “The History and Politics of Climate Engineering,” The Kiel Institute Summer School on Economic Policy, University of Kiel, Germany, June 2013.
- (I) “Multiple Anthropocenes and the Quest for a Planetary Fix” *The Ethical Challenges of Climate Engineering*, Institute for Advanced Sustainability Studies (IASS), Potsdam, Germany, May 2013.
- (I) “At the Cutting Edge: Harry Wexler and the Emergence of Atmospheric Science,” CoCoRAHS online seminar, Fort Collins, CO, Thursday, May 9, 2013, <http://www.youtube.com/watch?v=O-MqY0y1rt8&feature=youtu.be>
- (I) Ohio University, Voinovich School of Leadership and Public Affairs, “Rainmakers, Weather Warriors, and Climate Engineers,” April 2013.
- (I) “The Emergence of Atmospheric Science: Writing history along the Rossby-Wexler axis,” Department of History, University of Illinois at Champaign-Urbana, Jan. 2013.
- (K) “At the Cutting Edge: Harry Wexler and the Emergence of Atmospheric Science,” Distinguished Lecture, Forum for the History of Science, San Diego, Nov. 2012.
- (I) “Fixing the Sky: The checkered history of weather and climate control,” Geddes Simpson Distinguished Lecture, University of Maine—Orono, Oct. 2012.
- (I) Invited Panelist, The Anthropocene: Planet Earth in the Age of Humans. Smithsonian Grand Challenges Symposium, Washington, DC, Oct. 2012.
- (K) “The Emergence of Atmospheric Science: Standing on the shoulders of giants can be enlightening, fun — and sometimes risky!” 50th Anniversary Banquet Keynote Address, Colorado State University Department of Atmospheric Science, July 2012.
- (C) Carbon “die” Oxide: *Spiritus lethalis* and toxic climate pneuma, Anglo-American Meeting, Institute of Historical Research, London, June 2012.
- (K) “Cold War Technologies for Weaponizing the Atmosphere: From Cloud Wars to Geo-Engineering,” Cold War/ Blue Planet, Imperial War Museum and University of Manchester, June 2012.
- (I) “Climate Engineering History: Implications and Risks of Novel Options,” IMPLICC (“Implications and Risks of Novel Options to Limit Climate Change), Max Planck Institute for Chemistry, Mainz, Germany, May 2012
- (I) “Historical Perspectives on Climate Change,” MIT Energy Initiative, Massachusetts Institute of Technology, May 2012.
- (I) “Geoengineering’s checkered past and troubling prospects,” Geoengineering: The politics of planetary modification, Society & Environment Program, Lancaster University, UK, May 2012.
- (I) “The Emergence of Atmospheric Science,” Georgia Tech, April 2012.
- (I) “Fixing the Sky: Rube Goldberg meets Dr. Strangelove,” Departments of Economics, Public Policy, and History, Technology and Society, Georgia Tech, April. 2012.
- (K) “Fixing the Sky: Rube Goldberg meets Dr. Strangelove,” Scholars’ Convocation, Grinnell College, April 2012.
- (K) “Transformative Technologies and International Cooperation in the Career of Harry Wexler (1911-1962),” American Meteorological Society, New Orleans, Jan. 2012.

- (I) “Gaining It, Losing It, Regaining It? Lessons from the History of Climate Change and Climate Control,” *Climate Change in Social Sciences*, National Hellenic Research Foundation, Athens, Greece, Jan. 2012.
- (I) “Pictur(e)ing Climate Control,” Conference on Pictur(e)ing Climate — Visualizations, Imaginations, Documentations, University of Potsdam and Potsdam-Institut für Klimaforschung, Potsdam, Germany, Jan. 2012.
- (I) “History of Geoengineering,” *Geoengineering the Climate - an Issue for Peace and Security Studies?* University of Hamburg, Nov. 2011.
- (I) “Fixing the Sky: The Checkered History of Weather and Climate Control,” Seminar in Marine Sciences, University of Maine—Orono, Nov. 2011.
- (K) “Fixing the Sky: Rube Goldberg meets Dr. Strangelove,” All-University Lecture Series, Carnegie Mellon University, Oct. 2011.
- (I) “Molecular Reductionism and Climatic Determinism, Then and Now: Ellsworth Huntington’s Biocosmics of Ozone,” CNRS International Colloquium on Climate Knowledge and Politics, XVIII-XX centuries, Paris, Sept. 2011.
- (K) “Rube Goldberg Weather Control,” “Dr. Strangelove Climate Control,” and “What Counts as Knowledge?” Three lectures at Woods Hole Oceanographic Institute, August 2011.
- (K) “From Meteorology to Global Change: 150 years of accomplishments and challenges,” Royal Meteorological Society 150th Anniversary Meeting, “Exeter, UK, June 2011.
- (K) “Creating a Sense of Place,” Maine Congress of Lake Associations, Waterville, ME, June 2011
- (I) “Skyscapes and Anti-Skyscapes: Making the invisible visible,” Conference on the Anti-Landscape, Nordic Network for Interdisciplinary Environmental Studies, Odense, Denmark, May 2011.
- (I) “Fixed Air and Fixed Sky: Wild Spirit and Wild Ideas,” Chemical Weather, Chemical Climate, The Gordon Cain Conference, Chemical Heritage Foundation, Philadelphia, April 2011.
- (I) “What Counts as Knowledge? A Look at Geoengineering History,” NASA-Goddard Spaceflight Center Colloquium, Greenbelt, MD, simulcast to NASA-GISS and to NASA Wallops Island, March 2011.
- (K) “History, Culture, and Climate,” University of Waikato, New Zealand, March 2011.
- (I) “Historical Perspectives on Climate Change,” Osher Lifelong Learning Institutes Seminar, Fairfax, VA, in conjunction with the National Oceanic and Atmospheric Administration, Silver Spring, MD, March 2011, <http://www.climatewatch.noaa.gov/video/2012/historical-perspectives-on-climate-change>.
- (I) “Scientific weather modifications – a solution or danger to future climate changes?” *The Age of Uncertainty: Climate change, water systems and social development*, University of Bergen, Norway, Norwegian Academy of Science, Feb. 16-18, 2011.
- (I) “Cold Regions and Cold War: Harry Wexler as Scientific *Entrepreneur*,” Rachel Carson Center, Deutsches Museum Conference on Snow and Ice in the Cold War, Munich, Germany, Jan. 2011.
- (I) “What Counts as Knowledge? Using Science Dynamics to Communicate Climate Dynamics,” American Meteorological Society, Seattle, WA, Jan. 2011.
- (I) “Fixing the Sky,” Atmospheric Science Department, University of Washington, Jan. 2011.
- (K) “Re-culturing Climate,” Cultural Spaces of Climate Conference, University of Nottingham, UK, Dec. 2010. Video here: <http://workspace.nottingham.ac.uk/display/culturalclimate/Welcome>
- (I) “Space Geoengineering: James A. Van Allen’s Role in Detecting and Disrupting the Magnetosphere, 1958-1962,” Paper Number ED11B-03, American Geophysical Union, San Francisco, CA, Dec. 2010.
- (I) “Fixing the Sky: Why the History of Climate Engineering Matters,” Paper Number GC31D-04, American Geophysical Union, San Francisco, CA, Dec. 2010.
- (I) “Fixing the Sky: The Checkered History of Weather and Climate Control,” McGill University, Nov. 2010.
- (C) “Visualizing Climate Change, Crisis and Intervention: A tragicomic history,” American Studies Association, San Antonio, TX, November 2010.

- (C) "James Van Allen: Discovery and Disruption of the Magnetosphere, 1958-1962," Society for the History of Technology, Tacoma, WA, October, 2010
- (I) "Tragi-comedic Planetary-scale Interventions: Stories and Histories," Emerging Terraformations Conference, U.C. Santa Cruz, Oct. 2010.
- (I) "Fixing the Sky: Cautionary tales from the history of climate engineering," American Association of Aerosol Research, Portland, OR, Oct. 2010; also at Oslo University, Stockholm University, Aarhus University, Oregon State University, and University of Oregon, Fall, 2010.
- (C) "What Counts as Knowledge?" International Conference on Climate Intervention Technologies, Asilomar, CA, March 2010.
- (C) "James A. Van Allen's Role in Discovering and Disrupting Earth's Magnetosphere, 1958-1962," National Council on Public History, Portland, OR, Mar. 2010.
- (C) "Fixing the Sky," AAAS Symposium on Geoengineering, San Diego, CA, Feb. 2010.
- (K) "Geoengineering and Alternate Energy Technologies," Lorne Trotter Public Science Symposium on Escaping Climate Change Catastrophe: Planetary re-engineering or self sacrifice? McGill University, Montreal, Quebec, Canada, Nov. 2009.
- (I) "Historical Perspectives on Fixing the Sky," MIT Symposium on Climate Engineering, Oct. 2009.
- (I) "History of Climate Change," Climate Change Conference, Linda Hall Library, Kansas City, Missouri, Oct. 2009, <http://vimeo.com/7783156>
- (I) "Earth Observations from Space: Scientific Accomplishments at the Dawn of the Space Age," NASA Earth System Science at 20: Accomplishments, Plans, and Challenges, National Academy of Sciences, Washington, DC, June 2009.
- (I) "Perspectives from History and Science Studies," Geoengineering Options to Respond to Climate Change: Steps to Establish a Research Agenda, A National Academy of Sciences workshop to provide input to America's Climate Choices suite of activities, June 15-16, 2009, Washington, DC.
- (I) "Climate Engineering," Planet U: The Human Story of Climate Change, University of Illinois, April 2009, <http://www.planetu.illinois.edu/>
- (I) "Fixing the Sky: Does Geo-engineering have a history?" Atmospheric Science Colloquium, Colorado State University, Jan. 2009.
- (I) "Fixing the Sky," History Department, Colorado State University, Jan. 2009.
- (I) "Earth Observation from Space: Accomplishments, challenges, and realities," at "NASA's First 50 Years: An Historical Perspective," NASA, Washington, DC, Oct. 28-29, 2008.
- (I) "Fixing the Sky: The checkered history of weather and climate control." Nature and Culture Seminar, University of Kansas. Oct. 2008.
- (I) "Past Projections of Future Climate Control." Climate Matters Conference, University of Manchester, UK. Oct. 2008.
- (C) "Past Projections of Future Climate Control." Society for the History of Technology annual meeting, Lisbon, Portugal. Oct. 2008.
- (I) "Fears, Fantasies, and the Possibility of Climate Control: A useable history of climate engineering." Atmospheric and Oceanic Science Seminar, University of Maryland. Sept. 2008.
- (I) "The Climate Engineers: Fantasies of Control," Phi Beta Kappa Lecture, University of Maine—Orono, April 2008.
- (C) "Controlling the Uncontrollable: Peaceful and hostile visions of weather and climate control," Organization of American Historians, New York City, March 2008.
- (C) "Earth Observations from Space: The First Two Decades," AAAS Symposium, Boston, MA, Feb. 2008.
- (I) "Perspectives on the Anthropocene," Cornerstones of Science, Curtis Memorial Library, Brunswick, ME, Nov. 2007.
- (K) "The Climate Engineers: Fantasies of Control," Gordon Manley Memorial lecture of the Royal Meteorological Society, Department of Geography, Durham University, UK, Nov. 2007.

- (C) "Making Meteorology Global: Polar Weather and Climate Research in the Career of Harry Wexler, 1933-1962," Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years, Smithsonian Institution, Washington, DC, Oct. 2007.
- (C) "Weaponizing the Climate: Historical Roots, Reactions, and Current Status of the 1978 ENMOD Treaty," (with Mette Fog Olwig) Symposium on Social History of Military Technology, International Congress of the History of Technology (ICOTEC), Copenhagen, Denmark, 14-18 August 2007.
- (I) "Planetary-scale Field Work: Harry Wexler on the possibilities of ozone depletion and climate control," Symposium on Knowing Global Environments: New historical perspectives on the field sciences and the multiple scales of nature, University of Pennsylvania, Philadelphia, May 2007.
- (I) "Advancing Polar Weather and Climate Research and Communicating Its Wonders: A History of Quests, Questions, and Capabilities," Conference on Smithsonian at the Poles, Smithsonian Institution, Washington, DC, 3-4 May 2007.
- (I) "Historical Perspectives on Climate Change," National History Center Congressional Briefing, Russell Senate Office Building, Washington, DC, May 2007.
- (I) "The Climate Engineers: Fantasies of Control," Historical Seminar on Contemporary Science and Technology, Smithsonian National Air and Space Museum, April 2007.
- (I) "Guy Stewart Callendar and Climate Change: Life, work, and legacy," Department of History of Science, Medicine and Technology, Johns Hopkins University, April 2007.
- (I) "Climate Change, Security, and Survival: Ethical and Unethical Choices," St. Charles Advocacy Committee, St. Charles Borromeo Catholic Church, Alexandria, VA, April 2007.
- (I) "The Climate Engineers: Fantasies of Control," Nature and Culture Seminar, Hall Center for the Humanities, University of Kansas, March 2007.
- (I) "IPCC: History, Science, and Public Policy," (with Takao Shibata, negotiator of the Kyoto Protocol), co-sponsored by the Globalization Seminar, Nature and Culture Seminar, and Center for Remote Sensing of Ice Sheets, Hall Center for the Humanities, University of Kansas, March 2007.
- (C) "Living on the Edge of Global Climate Change: A History of Intervention," American Society for Environmental History, Baton Rouge, LA, March 2007.
- (I) "Steam, combustion, and CO₂: The life and work of Guy Stewart Callendar," American Meteorological Society, San Antonio, TX, Jan. 2007.
- (I) "The Papers of Guy Stewart Callendar: A digital archive on DVD," Atmospheric Science Librarians International Conference, San Antonio, TX, Jan. 2007.
- (C) "The Chequered History of Weather and Climate Control," Work-in-Progress Seminar, Woodrow Wilson International Center for Scholars, Washington, DC, Jan. 2007.
- (I) WWBT?: What Would Ben Think about Killer Apps, Cutting Edges, and Tipping Points in the History of Weather and Climate?" Symposium on Benjamin Franklin, Geophysicist: A Tercentenary Update, American Geophysical Union, San Francisco, Dec. 2006.
- (I) "A History of Weather and Climate Control," Reading University Department of Meteorology and UK Meteorological Office, Exeter, Nov. 2006.
- (I) "Engineering the Global Climate: A History of Tipping Points and 'Archimedean' Interventions," Tyndall Climate Centre, University of East Anglia, Norwich, Nov. 2006.
- (I) "The Chequered History of Weather and Climate Control," Seminar in the History of Science and Technology, London Science Museum and Imperial College, London, Nov. 2006.
- (I) "Managing Solar Radiation: Historical Frameworks and Choices," NASA-Ames/Carnegie Institution Workshop on Managing Solar Radiation, Nov. 2006.
- (C) "Writing Lives: Biography as a Window to Interpreting Technology," Society for the History of Technology, Las Vegas, NV, Oct. 2006.
- (I) "The Chequered History of Weather and Climate Control," History of Science and Medicine Colloquium, Yale University, Oct. 2006.

- (K) “Exploring Weather and Climate: A history of killer apps, cutting edges, and tipping points,” 2006 Exploring Space Lecture Series, Smithsonian National Air and Space Museum, Washington, DC, June 2006. [http://ali.apple.com/ali_sites/ali/exhibits/1001730/;](http://ali.apple.com/ali_sites/ali/exhibits/1001730/)
http://www.youtube.com/watch?v=S2mqmyHNsB0&feature=player_embedded
- (C) “Killer Apps, Cutting Edges, and Tipping Points in the History of Weather and Climate.” Being an illustrated history of atmospheric sciences, services, and technologies in the twentieth and early twenty-first centuries, with descriptions of the most illuminating episodes and sketches of the most colourful characters, together with ethical insights and suggestions for improvements, Works in Progress Seminar, Smithsonian National Air and Space Museum, Washington, DC, April 2006.
- (I) “The Pathological History of Weather and Climate Control,” Department of History of Science, Medicine and Technology, Johns Hopkins University, March 2006.
- (I) “Global Climate Change and Human Agency: History, Ethics, and Public Policy,” Rock Ethics Institute, History Department, and STS Program, Pennsylvania State University, Feb. 2006.
- (C) “Fantasy and Reality in the History of Weather and Climate Control,” American Geophysical Union, San Francisco, Dec. 2005.
- (I) “Climate Change, Human Agency, and Health in Early America,” History of the Health Sciences Lecture Series, University of Virginia, Oct. 2005.
<http://www.virginia.edu/flashaudio/healthsciences/fleming.mp3>
- (I) “Historical Promise and Problems of Weather and Climate Modification,” Korean Meteorological Agency, Seoul, July 2005.
- (C) “Milankovic’s Search for the Missing Link Between the Celestial and the Earth Sciences,” with Aleksandar Petrovic, International Congress of History of Science, Beijing, China, July 2005.
- (C) “The History of Meteorology Goes Digital: Online interpretive, bibliographical, and archival sources worldwide,” Symposium on History of Science Online: New possibilities and new challenges, International Congress of History of Science, Beijing, China, July 2005.
- (I) “Weather and Climate Modification: Science Policy meets the History of Science,” Carnegie Mellon University, Pittsburgh, PA, March 2005.
- (I) “The Pathological History of Weather and Climate Modification: Three cycles of promise and hype,” STS Program, Pennsylvania State University, March 2005.
- (I) “Climate Dynamics, Science Dynamics, and Technological Change,” Millersville University, Millersville, PA, March 2005.
- (I) “Weather and Climate Modification: Science Policy meets the History of Science,” Mid-Maine Global Forum, Waterville, Maine, Feb. 2005.
- (I) “Critical Reflections on Climate Change and Culture: The Enlightenment Nexus,” Group for Early Modern Studies, The University of Arizona, Jan. 2005.
- (I) “Negotiating Between Heaven and Earth: James Croll and Milutin Milankovic in Historical Context,” Department of Atmospheric Sciences and Institute of Atmospheric Physics, The University of Arizona, Jan. 2005.
- (C) “The Earth is Not an Artifact,” Commentary presented at Society for the History of Technology Panel, American Historical Association, Seattle, Washington, Jan. 2005.
- (I) “Climate Change, Human Agency, and Health in Early America,” Conference on Health and Medicine in the Era of Lewis and Clark, The Wood Institute for the History of Medicine, College of Physicians of Philadelphia, Nov. 2004.
- (I) “James Croll in Context: The encounter between climate dynamics and geology in the second half of the nineteenth century,” Milankovitch Anniversary Symposium: Paleoclimate and the Earth’s Climate System, Belgrade, Serbia, Aug. 2004.
- (C) “The Science and Politics of Climate: Uncertain Science vs. Uncertain Policy,” Gordon Research Conference, Science & Technology Policy: Who Wins, Who Loses, Who Cares? Big Sky Ranch, Montana, Aug. 2004.

- (K) "Climate Dynamics, Science Dynamics, and Technological Change, 1804-2004," Presidential Address, From Beaufort to Bjerknes and Beyond: Critical Perspectives on the History of Meteorology, International Commission on History of Meteorology, Polling, Germany, July 2004.
- (I) "A Virtual Sabbatical in the U.S. Serial Set," Government Publications Librarians of New England meeting, Colby College, Maine, May 2004.
- (I) "The Pathological History of Weather and Climate Modification: Failed technologies meet uncertain policies, or, The Third Cycle of Promise and Hype," International Workshop on Climate Change Studies: Where are we now and how did we get here? Institut de Recherches Interdisciplinaires sur les Science et la Technologie, Université Louis Pasteur, Strasbourg, France, Mar. 2004.
<http://irist.u-strasbg.fr/CCS/>
- (C) "Distorted Support: Pathologies of Weather Warfare," Panel on the U.S. Armed Forces and American Science, American Historical Association, Washington, DC, Jan. 2004.
- (C) "Localism meets Globalism: Reductionist and Determinist Themes in the History of Global Climate Studies," Local and Global Perspectives in Meteorology, History of Science Society Annual Meeting, Cambridge, MA, Nov. 2003.
- (I) "Weather Modification: A Historian's Perspective," Colloquium on Weather Modification and Its Societal Impact, The University at Albany, Albany, NY, Nov. 2003.
- (I) "Climate, Culture, and Carbon Dioxide," The W. John and Gail M. Hussey Commemorative Lecture, College of Earth and Mineral Sciences, Pennsylvania State University, Oct. 2003.
- (I) "'Fixing' the Weather and Climate for Civilian and Military Purposes," Rock Ethics Institute Lecture, co-sponsored by the Science, Medicine, Technology, and Culture Program, Pennsylvania State University, Oct. 2003.
- (I) "G.S. Callendar and the Revival of the CO₂ Theory of Climate Change," Climate Sciences Seminar, Scripps Institution of Oceanography, La Jolla, CA, Oct. 2003.
- (I) "Civilization and Climate: Determinism, reductionism, and strategies of intervention in historical perspective," Science Studies Seminar, University of California-San Diego, Oct. 2003.
- (I) "A Historian Looks at Climate Dynamics, Science Dynamics, and Technological Change," Ritter Memorial Public Lecture, Scripps Institution of Oceanography, La Jolla, CA, Oct. 2003. Videotape available from UCSD Library.
- (I) "G.S. Callendar and the Revival of the CO₂ Theory of Climate Change," Department of Atmospheric Sciences, Institute of Atmospheric Physics, and Institute for the Study of Planet Earth, The University of Arizona, May 2003.
- (C) "The Callendar Effect: Global Warming and Global Weather, 1938-1964," Putting Weather into Environmental History, American Society for Environmental History, Providence, RI, March 2003.
- (I) "What Role Did G.S. Callendar Play in Reviving the CO₂ Theory of Global Climate Change?" American Meteorological Society, Long Beach, CA, Feb. 2003.
- (I) "The Papers of Guy Stewart Callendar on CD-ROM. Vols. 1-7: The University of East Anglia Collection," Atmospheric Science Librarians International annual meeting, Long Beach, CA, Feb. 2003.
- (I) "Historical Perspectives on Climate Change," Emerging Conversations Project, Maine Department of Environmental Protection, Augusta, ME, Jan. 2003.
- (I) "Global Climate Change and the History of Science," East Asian Symposium on Environmental History and Climate Change, Kobe University, Japan, Jan. 2003.
- (I) "God, Nature, and Artifice," International Conference on World Peace, Washington, DC, Dec. 2002.
- (I) "Fixing the Weather and Climate: Military and Civilian Schemes for Cloud Seeding and Climate Engineering," Technological Fix Conference, Hagley Museum and Library, Delaware, Oct. 2002.
- (I) "Military Roots of Modern Meteorology: The Case of Army Surveillance in the Signal Corps," Naval Research Laboratory History Colloquium, co-sponsored by Sigma Xi, Washington, DC, May 2002.

- (C) “Irving Langmuir & Weather Control: A modern-day Quixote or Prometheus?” (with Steve Cole), *History of Meteorology: Needs and Opportunities*, International Commission on History of Meteorology, Washington, DC, May 2002.
- (I) “Climatology: A Myth-saturated Science,” Distinguished Speaker Series, STS Program, University of Michigan, Ann Arbor, April 2002.
- (I) “Tropical Storms, Isaac’s Storm, and Other Weather Disasters in History,” History Department, University of New Hampshire, Durham, April 2002.
- (I) “Historical Perspectives on Climate Change: From the enlightenment to global warming,” Jointly sponsored by Zentrum für Luft- und Raumfahrt, Deutsche Meteorologische Gesellschaft, und Fachausschuß Geschichte der Meteorologie, Munich, Germany, March 2002.
- (I) “John Tyndall, Svante Arrhenius, and G.S. Callendar: Three pioneers in climate change research,” Tyndall Centre for Climate Change Research, University of East Anglia, Norwich, UK, March 2002.
- (C) “The Carbon Dioxide Theory of Climate Change: Emergence, eclipse, and reemergence, ca. 1850-1950,” 13th Symposium on Global Change and Climate Variations, American Meteorological Society Annual Meeting, Orlando, FL, Jan. 2002.
- (I) “Carbon Dioxide and Climate: Ideas and Apprehensions on Decadal to Centennial Time Scales,” Department of Atmospheric Science, Colorado State University, Nov. 2001.
- (I) “Carbon Dioxide and Climate: The first 100 years,” NASA-Goddard Spaceflight Center, Greenbelt, MD, Oct. 2001.
- (C) “Sverre Petterssen, the Bergen School, and the Forecasts for D-Day,” Symposium on International Perspectives on the History of Meteorology: Science and Cultural Diversity, XXI International Congress of History of Science, Mexico City, July 2001.
- (I) “Climate, Culture, and Carbon Dioxide,” Department of Science Studies, University of California—San Diego, Jan. 2001.
- (I) “Sverre Petterssen, the D-Day Forecast, and the Rise of Modern Meteorology,” Department of Atmospheric Sciences, Institute of Atmospheric Physics, and Institute for the Study of Planet Earth, The University of Arizona, Jan. 2001.
- (I) “Climatology: A Myth-saturated Science,” Centre for the History of Science, Technology and Medicine and Wellcome Unit for the History of Medicine, University of Manchester, UK, Nov. 2000.
- (I) “John Tyndall’s Research on Trace Gases and Climate,” Dedication of the Tyndall Centre for Climate Change Research, University of East Anglia, UK, Nov. 2000.
- (I) “Civilization, Climate and Ozone: Ellsworth Huntington’s Biophysics, Biocosmics, and Biocracy,” Conference on Good Airs and Bad, Wellcome Unit for the History of Medicine, School of History, University of East Anglia, UK, Nov. 2000.
- (I) “Climatology: A Myth-saturated Science,” May 2000.
 History Department, University of Otago, Dunedin NZ
 History Department, University of Canterbury, Christchurch, NZ
 Geography Department, University of Canterbury, Christchurch, NZ
 History Department, University of Sydney, Australia
 School of STS, University of New South Wales, Sydney, Australia
 Centre for Resource and Environmental Studies, Australian National University, Canberra, Australia
 History and Philosophy of Science Department, Centre for the Study of Health and Society, Geography Department, and Environmental Studies Department, University of Melbourne, Australia
- (I) “Carbon Dioxide, ‘Climythyology’, and the History of Science,” STS Colloquium Series, Massachusetts Institute of Technology, Feb. 2000.
- (I) “Historical Perspectives on Climate Change,” Dept. of Geosciences, University of Southern Maine, Nov. 1999.

- (I) “The Historiography of Science, Technology and the Environment: An American Perspective,” Historical Writing on American Science: The Current State of the Field, History of Science Society Annual Meeting, Pittsburgh, PA, Nov. 1999.
- (C) “Storms, Strikes, and Surveillance: The U.S. Army Signal Office, 1861-1891,” Environmental Sciences Working Group, History of Science Department, Harvard University, Oct. 1999.
- (I) “Carbon Dioxide and Climate: The First One Hundred Years, 1859-1959,” Institute for the Study of Earth, Oceans, and Space, University of New Hampshire, Mar. 1999.
- (K) “History of Meteorology: The Sky Is the Limit,” American Meteorological Society Annual Luncheon Speaker, Dallas, TX, Jan. 1999.
- (I) “T.C. Chamberlin and the Carbon Cycle: From Glacial Geology to Earth System Science,” Department of Atmospheric Sciences, Institute of Atmospheric Physics, and Institute for the Study of Planet Earth, The University of Arizona, April 1999.
- (I) “Carbon Dioxide and Climate: The First One Hundred Years, 1859-1959,” Science, Ethics, and Public Policy Seminar, California Institute of Technology, Pasadena, CA, Nov. 1998.
- (I) “Apprehending Climate Change: Science and Public Opinion, 1790-1990,” Department of History, University of Maine—Orono, Nov. 1998.
- (C) “The U.S. Army Signal Service, 1870-1891: Telegraphy, Storms, and Social Control,” American Geophysical Union, Boston, May 1998.
- (I) “Carbon Dioxide and Climate: From John Tyndall to the IGY,” Institute of Atmospheric Physics seminar, The University of Arizona, Tucson, Jan. 1998.
- (C) “Carbon Dioxide and Climate: The First Fifty Years,” Ninth Symposium on Global Change Studies, American Meteorological Society Annual Meeting, Phoenix, AZ, Jan. 1998.
- (C) “Global Warming, Global Cooling: Historical Perspectives on Climate, Culture, and Industry,” Symposium—The Industrial Environment, International Congress of History of Science, Liège, Belgium, July 1997.
- (I) “Lyell and Climatic Change,” International Bicentennial Conference on Charles Lyell and James Hutton, Geological Society of London, London, England, July 1997.
- (I) “The Mexican Boundary and the Boundaries of Science: Jean Louis Berlandier and the Politics of Exploration,” Conference on Surveying the Record: North American Scientific Exploration to 1900, American Philosophical Society, Mar. 1997.
- (I) “From Army Surgeons to Weather Warfare: Military Roots of Modern Meteorology,” Department of Atmospheric Sciences, The University of Arizona, Tucson, Jan. 1997.
- (I) “Global Changes: History, Climate, and Culture,” Institute for the Study of Planet Earth and Institute of Atmospheric Physics seminar, The University of Arizona, Tucson, Jan. 1997.
- (I) “Apprehending Climate Change: Innovation in Science and the History of Science,” The Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation, National Museum of American History, Smithsonian Institution, Washington, D.C., May 1996.
- (I) “T.C. Chamberlin and the Geological Agency of the Atmosphere,” Cosmography Symposium, Puget Sound Colloquium for the History and Philosophy of Science, University of Washington, Seattle, WA, May 1996.
- (C) “Joseph Fourier's Theory of Terrestrial Temperatures,” American Geophysical Union, Baltimore, May 1996.
- (C) “The Smithsonian Meteorological Project, 1848-1874,” American Geophysical Union, Baltimore, May 1996.
- (C) “Geophysics Before 1945,” History of Science Society, Minneapolis, MN, Oct. 1995.
- (C) “Chain Reactions in Cumulus Clouds: Technologies of Weather Warfare, 1947-1977,” Society for the History of Technology, Lowell, MA, Oct. 1994.
- (I) “Apprehending Global Change: Perspectives from the History of Science,” Earth System Science Center, College of Earth and Mineral Sciences, The Pennsylvania State University, University Park, June 1994.
- (C) “Extinct Meteorological Instrumentation,” American Geophysical Union, May 1994.

- (I) “Historical Perspectives on Global Change Science,” Department of Atmospheric Science, The University of Arizona, Tucson, Mar. 1994.
- (K) “From the Inside and the Outside: Interdisciplinary Perspectives on the History of the Earth Sciences,” Geological Society of America, Penrose Conference, San Diego, CA, Mar. 1994.
- (I) “Apprehending Global Change: Perspectives from the History of Science,” Centre for Climate and Global Change Research, McGill University, Montreal, Canada, Oct. 1993.
- (I) “Historical Perspectives on Climate Change Research,” Center for Space Physics, Boston University, Mar. 1993.
- (I) “Historical Perspectives on Climate Change Research,” Department of Physics, Boston College, Mar. 1993.
- (I) “On-line Searching,” Conference on History, Postgraduate Education, and Computers, Institute of Historical Research, University of London, Feb. 1993.
- (C) “Apprehending Climate Change: A Report on Knowledge and Fear,” History of Science Society, Washington, D.C., Dec. 1992.
- (I) “Beyond the Blue Event Horizon: Historical Perspectives on Atmospheric Change,” STS Program, Massachusetts Institute of Technology, Cambridge, MA, Sept. 1991.
- (C) “The Changing Nature of Climatic Change,” History of Science Society, Seattle, WA, Oct. 1990.
- (I) “Weather Modification and the Military, 1947-1977,” Smithsonian Institution-Naval Research Laboratory conference, Science and the Federal Patron, Washington, D.C., Sept. 1989.
- (C) “Meteorological Crusades of the Nineteenth Century,” American Meteorological Society, Anaheim, CA, Feb. 1989.
- (C) “Extinct Meteorological Instrumentation: Some Examples from Nineteenth-Century America,” History of Science Society, Raleigh, NC, Oct. 1987.
- (I) “The American Storm Controversy and Observational Attempts to Resolve It, 1834-1860,” American Geophysical Union, Baltimore, May 1987; in revised form at University of Maryland, Feb. 1988; The Pennsylvania State University, April 1988; and Colby College, May 1988.
- (I) “Rational and Sensible Horizons: The Smithsonian Meteorological Project and Its Kin,” Princeton University, History of Science Colloquium, Jan. 1986; University of Pennsylvania, History and Sociology of Science Colloquium, Jan. 1986; Johns Hopkins University, Mar. 1986.
- (C) “The Clouds that Gather ‘Round the Setting Sun: Ante-bellum Meteorological Networks and the Problem of American Storms,” *International Congress of History of Science*, Berkeley, CA, 1985.

REVIEWS

- Make it Rain: State control of the atmosphere in twentieth-century America* by Kristine C. Harper (Chicago: University of Chicago Press, 2017) in *Nature* 544 (06 April 2017): 32-33.
- Climate Change and the Course of Global History: A Rough Journey*, by John L. Brooke. New York: Cambridge University Press, 2014, in *American Historical Review* 120 (2015): 965.
- The Earthquake Observers: Disaster Science from Lisbon to Richter*, by Deborah R. Coen (Chicago: University of Chicago Press, 2013), in *Journal of Modern History* 86 (2014): 656-657.
- A History of the Science and Politics of Climate Change: The Role of the Intergovernmental Panel on Climate Change*, by Bert Bolin (Cambridge: Cambridge University Press, 2007), in *Ambix* 58 (2011): 82-95.
- A Nuclear Winter’s Tale: Science and Politics in the 1980s*, by Lawrence Badash (Cambridge, MA: MIT Press, 2009), in *Isis* 102 (2011): 198-199.
- A Cultural History of Climate*, by Wolfgang Behringer, transl. P. Camiller (Cambridge: Polity Press, 2010), in *Environment and History* 16, no. 4 (2010): 515-517.
- British Weather and the Climate of Enlightenment* by Jan Golinski (University of Chicago Press, 2007), in *American Historical Review* (June 2009), 830-831.
- The Great Warming: Climate Change and the Rise and Fall of Civilizations*, by Brian Fagan (New York: Bloomsbury Press, 2008) in *Physics Today* (March 2009), 52-53.

- Hurricanes and Society in the British Greater Caribbean, 1624-1783*, by Matthew Mulcahy, in *American Historical Review* 112 (April, 2007).
- The Ice Chronicles: The Quest to Understand Global Climate Change*, by Paul Andrew Mayewski with Frank White (Hanover, NH: University Press of New England, 2002), in *Isis* 93 (2002): 755-56.
- Americans and Their Weather*, by William B. Meyer (New York: Oxford University Press, 2000), in *Isis* 93 (2002): 332-33.
- Reading the Skies: A cultural history of English weather, 1650-1820*, by Vladimir Jankovic' (Chicago: University of Chicago Press, 2000), in *Agricultural History* 76 (2002): 132-34.
- Eduard Brückner: The sources and consequences of climate change and climate variability in historical times*, edited by Nico Stehr and Hans von Storch (Dordrecht, Boston, London: Kluwer Academic, 2000), in *Isis* 93 (2002): 91.
- Greenhouse: The 200-year story of global warming*, by Gail Christianson (New York: Walker, 1999), in *Isis* 92 (2001): 376-77.
- "To Measure the Atmosphere: An exhibit on the history of weather instruments at the Musée des arts et métiers, Paris, France." *Bulletin of the American Meteorological Society* 81 (2000): 2486-87.
- "History of Meteorology in Germany: A Special Issue of the *Meteorologische Zeitschrift*." *Bulletin of the American Meteorological Society* 79 (Sept., 1998): 1939-41.
- Snow in America: A Cultural History*, by Bernard Mergen (Washington, D.C.: Smithsonian Institution Press, 1997), in *Bulletin of the American Meteorological Society* 79 (1998): 889.
- Exploring the Universe*, edited by Peter Day (Oxford: Oxford Univ. Press, 1997), in *Choice* 35 (June 1998): 5618.
- Perils of a Restless Planet: Scientific Perspectives on Natural Disasters*, by Ernest Zebrowski, Jr. (Cambridge: Cambridge Univ. Press), in *Isis* 89 (1998): 328-29.
- Science and the Founding Fathers: Science in the Political Thought of Thomas Jefferson, Benjamin Franklin, John Adams, and James Madison*, by I. Bernard Cohen (New York, London: W.W. Norton, 1995), in *Isis* 88 (1997): 543-44.
- A Social History of American Technology*, by Ruth Schwartz Cowan (New York/Oxford: Oxford Univ. Press, 1997) in *Choice*.
- Michael Faraday*, by Geoffrey Cantor, David Gooding, and Frank A.J.L. James (New Jersey: Humanities Press, 1996), in *Choice* 34 (April 1997): 4445.
- All the Modern Conveniences: American Household Plumbing, 1840-1890*, by Maureen Ogle (Baltimore: Johns Hopkins Univ. Press, 1996), in *Choice* 34 (Jan. 1997): 2729.
- The Great Flood of 1993: Causes, Impacts, and Responses*, edited by Stanley A. Changnon (Boulder: Westview, 1996), in *Choice* 34 (Sept. 1996): 0319.
- Braving the Elements: The Stormy History of American Weather*, by David Laskin (New York: Doubleday, 1996) in *Journal of American History* (Dec. 1996): 993-94.
- The Scientific Voice*, by Scott L. Montgomery (Guilford, 1996), in *Choice* 33 (June 1996): 5682.
- Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*, by Theodore M. Porter (Princeton University Press, 1995), in *Choice* 33 (Nov. 1995): 1499.
- Patronage, Practice, and the Culture of American Science: Alexander Dallas Bache and the U.S. Coast Survey*, by Hugh Richard Slotten (Cambridge University Press, 1994), in *Isis* 86 (1995): 338-39.
- The Norton History of Technology*, by Donald Cardwell (New York: W.W. Norton, 1994), in *Choice* 32 (July/August 1995): 6199.
- Ozone Discourses: Science and Politics in Global Environmental Cooperation*, by Karen T. Litfin (New York: Columbia University Press, 1994), in *Choice* 32 (May 1995): 5046.
- Early American Technology: Making and Doing Things from the Colonial Era to 1850*, edited by Judith A. McGaw (University of North Carolina Press, 1994), in *Choice* 32 (Mar. 1995): 3861.
- Exploring the Earth: Progress in Geophysics since the 17th Century*, edited by W. Schröder, M. Colacino, and G. Gregori (Bremen-Reonnebeck, Germany, 1992), in *Earth Sciences History* 13 (1994): 82-83.

- Weather Pioneers: The Signal Corps Station at Pike's Peak*, by Phyllis Smith (Swallow, 1993), in *Bulletin of the American Meteorological Society* 74 (1993): 1592-93.
- Science, American Style*, by Nathan Reingold (Rutgers University Press, 1991), in *Physics Today* (April 1992): 90-91.
- Climate Since A.D. 1500*, edited by Raymond S. Bradley and Philip D. Jones (Routledge, 1992), in *EOS, Transactions of the American Geophysical Union* 73 (1992): 531.
- "A Geophysical Entrepreneur." Review of *Appropriating the Weather: Vilhelm Bjerknes and the Construction of a Modern Meteorology*, by Robert M. Friedman (Cornell University Press, 1989), in *Science* 245 (8 Sept. 1989): 1124.
- America's Weather Warriors 1814-1985*, by Charles C. Bates and John F. Fuller (Texas A&M University Press, 1986), in *Technology and Culture* 29 (1988): 161-62.
- Minerals, Lands, and Geology for the Common Defence and General Welfare*, by M.C. Rabbit in *Isis* 78 (1987): 457-58.

REPORTS, SHORT ARTICLES, NOTES AND ABSTRACTS

- "Reflections on Climate at Keyword and Shape-Shifting Noun," *River Rail* (Fall 2019): 74-75.
- "Responding to Climate Change at the Poles: Findings from the National Research Council's Reports on Climate Intervention." (McNutt, Marcia, J.R. Fleming, et al.). American Geophysical Union, Meeting, Abstract 62153. San Francisco, CA, 2015.
- "Foreword," *Climate, Science, and Colonization: Histories from Australia and New Zealand*, James Beattie, Emily O'Gorman and Matthew Henry, eds. New York: Palgrave, 2014.
- "Impacts of Climate Related Geo-engineering on Biological Diversity," (Multiple authors). Convention on Biological Diversity, United Nations Environment Programme. UNEP/CBD/SBSTTA/16/INF/28. April 2012.
- Weather as a Weapon: The troubling history of geoengineering so far, *Slate Magazine*, <http://www.slate.com/id/2268232/>
- "Healthy Lakes and Vibrant Economies: Linking History, Sense of Place and Watershed Protection in the Belgrade Lakes Region," (with Erin Love). *Maine Policy Review* (Winter/ Spring 2012): 90-94.
- "National Weather Service Modernization: A Long History of Engagement with Scientific Discoveries, New Technologies, and Societal Needs." U.S. National Research Council, Assessment of the National Weather Service's Modernization Program, DELS-BASC-10-01. Washington, DC: National Research Council, 2011.
- Love, Erin A., Fleming, James R., and Rueger, Bruce F. Sense of Place in the Belgrade Lakes Region, Central Maine, Abstract No. 197029, Geological Society of America Annual Meeting, Minneapolis, MN, 9-12 Oct., 2011.
- "Manufacturing the Weather," *Chemical Heritage* 28, no. 2 (2010): 32-36.
- "On the Possibilities of Climate Control" in 1962: Harry Wexler on Geoengineering and Ozone Destruction," *EOS: Transactions of the American Geophysical Union* 88, 52 (2007), Fall Meeting Supplement, GC52A-01.
- "A 1954 Color Painting of Weather Systems as Viewed from a Future Satellite," *Bulletin of the American Meteorological Society* 88 (Oct. 2007): 1525-1527
- "Earth Observations from Space: The First 50 Years of Scientific Achievements," (with Bernard Minster, et al.), *EOS: Transactions of the American Geophysical Union* 88, 52 (2007), Fall Meeting Supplement, U32A-08.
- "Meeting of the International Commission on History of Meteorology, 5-9 July, 2004, Monastery of Polling, Upper Bavaria, Germany," (with Cornelia Lüdecke), *INHIGEO Newsletter* 37 (2004).
- "The Earth as an Artifact: SHOT Session at the AHA Seattle," *SHOT Newsletter* (April 2005): 3-4.
- "Climate dynamics, science dynamics, and technological change, 1804-2004," *Preprints of the International Commission on History of Meteorology, Polling, Germany, 5-9 July 2004*. http://www.meteohistory.org/2004polling_preprints/

- “The Carbon Dioxide Theory of Climate Change: Emergence, Eclipse, and Reemergence, ca. 1850-1950,” *Preprints of the 13th Conference on Global Change and Climate Variations*, Orlando, FL, American Meteorological Society, 2002.
- Focus book, *Historical Perspectives on Climate Change*, Author’s reply to William Kellogg and Nico Stehr, *Earth Sciences History* 18 (1999): 91-100.
- Author’s reply to K. Ya. Kondratyev, *EOS: Transactions of the American Geophysical Union* 80 (1999): 380.
- “Comment on ‘Observations of Tropical Stratospheric Winds Before World War II’,” *Bulletin of the American Meteorological Society* 80 (March 1999): 473.
- “Plucked Chickens, Cold Swedes: A Painless Introduction to the History of Meteorology,” *Colby* (Spring 1999): 64.
- “Joseph Fourier and the ‘Greenhouse Effect’,” *History of Science Society Abstracts*, Kansas City, 1998, p. 97.
- “The U.S. Army Signal Service, 1870-1891: Telegraphy, Storms, and Social Control,” American Geophysical Union, *Spring Meeting Abstracts*, 1998.
- “Carbon Dioxide and Climate: The First Fifty Years,” *Preprints of the Ninth Symposium on Global Change Studies*, Boston: American Meteorological Society, 1998.
- “Technological and Environmental Determinisms,” *Bulletin of Science, Technology & Society* 17, no. 2 (1997): 1-2. (Invited)
- “Global Warming, Global Cooling: Historical Perspectives on Climate, Culture and Industry,” *XXth International Congress of History of Science, Book of Abstracts—Symposia*. Liège, Belgium, 1997, 529.
- “Lyell and Climatic Change,” Bicentennial Conference on Charles Lyell, *Lyell Meeting Programme*. Royal Holloway, University of London, 1997, 9.
- “The Smithsonian Meteorological Project, 1848-1874,” *EOS: Transactions of the American Geophysical Union* 77 (1996): Spring meeting supplement, U42A-01.
- “Joseph Fourier’s Theory of Terrestrial Temperatures,” *EOS: Transactions of the American Geophysical Union* 77 (1996): Spring meeting supplement, A42B-01.
- “Extinct Meteorological Instrumentation—the 19th Century,” *EOS: Transactions of the American Geophysical Union* 75 (1994): Spring meeting supplement, 79.
- “Oral history interview with Gordon J. F. MacDonald, 1994 March 21,” <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/32156>
- “Apprehending Climate Change: A Report on Knowledge and Fear,” *History of Science in America: News and Views* 10 (Spring/Summer 1993): 2.
- “Battles in the Heavens: Military Metaphors and ‘Fronts’ in the Early Eighteenth Century,” *Bulletin of the American Meteorological Society* 73 (1992): 805.
- “The Earth, The Heavens, and the Carnegie Institution of Washington: Historical Perspectives after Ninety Years,” (Meeting Report), *History of Science in America: News and Views* 9, no. 2 (Fall 1992): 2-4.
- “The U.S. Signal Office International *Bibliography of Meteorology* (1889-1891),” *EOS, Transactions of the American Geophysical Union* 73 (1992): Spring meeting supplement, 77.
- “The Changing Nature of Climatic Change: Climate, Culture and Cultivation,” *History of Science in America: News and Views* 8 (Spring/Summer 1991): 2.
- “Historians Probe Geophysics in Seattle,” *EOS, Transactions of the American Geophysical Union* 72 (1991): 122-23.
- “The History of Climate Change,” *EOS, Transactions of the American Geophysical Union* 72 (1991): 58.
- “Storms, Strikes, Indian Uprisings, and Other Threats to Domestic Tranquility: The U.S. Weather Service and the Telegraph, 1870-1891,” *History of Science in America: News and Views* 6 (Spring/Summer 1989): 2.
- “Summary of Papers on the History of the Atmospheric Sciences,” *Bulletin of the American Meteorological Society* 69 (1988): 760-63.

- “Extinct Meteorological Instrumentation: Theory and observation in 19th-century America,” *Bulletin of the American Meteorological Society* 69 (1988): 760-61
- “Meteorological Association of Williams College: 150 Years Old,” *Bulletin of the American Meteorological Society* 69 (1988): 424.
- “The Clouds that Gather ‘Round the Setting Sun: Ante-bellum Meteorological Networks and the Problem of American Storms,” *Acts*, Vol. 1, *XVIIIth International Congress of History of Science* (Berkeley: Univ. of California, 1985): Ga.

TEACHING

COURSES TAUGHT

Science, Technology and Society; Revolutions in Science; Technology Matters; The Craft of Research; Weather, Climate and Society; Human/Nature in the 21st Century; History of Climate Change and Global Governance (at Columbia University); Carbon Dioxide Seminar; Digital Projects in History, History of Science in America; Body, Place, Planet; Medicine and Society; Climate Change History and Public Policy; Earth System Scientists; Global Environmental History; Technology, War and Society; Environment and Society; Cartesian Legacies; Native Natural Knowledge; Science in the Federal Government; Astronomy Since 1609; Technology and the Millennium

PH.D. SUPERVISION

Yale University, Graduate Ph.D. Committee of Rachel Rothschild (Ph.D. awarded 2015)

Michigan State University, Ph.D. Committee of Gabriel Henderson (Ph.D. awarded 2014)

Georgia Institute of Technology, Ph.D. Committee of Angelina Long (Ph.D. awarded 2013)

University of Manchester, UK, Ph.D. Committee (viva) of Alexander Hall (Ph.D. awarded 2012)

L’Ecole des Hautes Etudes en Sciences Sociales – Paris, Dissertation Defense Committee of Sebastian Grevsmühl (Ph.D. awarded 2012)

University of Pennsylvania, Ph.D. Committee of Roger Turner (Ph.D. awarded 2010)

University of Maine—Orono, Ph.D. Committee of Louis McNalley (Ph.D. awarded 2004)

PEDAGOGICAL ARTICLES AND PUBLISHED SYLLABI

- “STS and WWW at Colby.edu,” *Info@Colby.edu* (Fall 1999): 5.
- “Students from Colby College and the NASTS 14th Annual Conference,” (with Wesley A. Baff ’99, Raji C. Gupta ’99, Bethany R. Knorr ’01, and Patrick C. Upatham ’99), *Bulletin of Science, Technology and Society* 19, no. 4 (1999): 329-31.
- “The Minor for All Majors: STS and the Liberal Arts at Colby College” (with Amy A. Lyons ‘98). *Bulletin of Science, Technology, and Society* 18, no. 6 (Dec. 1998): 45-46.
- “ES 118: Environment and Society” (with David H. Firmage, F. Russell Cole, Thomas W. Shattuck, and Thomas H. Tietenberg). *Environmental History Review* 16 (Spring 1992): 99-113.
- “Science in America.” Pp. 46-49 in *History of Science Syllabus Sampler*, compiled by Henry Steffens. Burlington, Vt.: History of Science Society, 1992.

SERVICE

SERVICE TO COLBY

Chair of Interdisciplinary Studies, 1997-99, 2015-18

Director, Science, Technology and Society Program, 1988-92, 1993-99, 2000-03, 2007-2013, 2014-
STS Colloquium convener, 1988-92, 1993-99, 2000-03, 2007-2013, 2014-
Faculty Steering Committee, 2015-18

Promotion and Tenure Committee, 1998-99, 2000-01, 2011-12, 2012-13

Board of Trustees Honorary Degree Subcommittee, 1997-99, 2008-2012, 2014-16

Arts and Humanities theme co-director, “Revolutions,” 2016-17

President's Task Force on Academic Engagement, 2008
 Goldfarb Center for Public Policy and Civic Engagement, Steering Committee, 2007-present
 Editor, *A Plan for Interdisciplinary Studies at Colby College*, 1999
 Interdisciplinary Studies Council and Grants Committee, 1988-present; Chair, 1997-99
 Research Roundtable (co-convener with Emily Kugler), 2011-13
 Environmental Studies Advisory Committee, 1989-2005
 Environmental Science Advisory Committee, 2017-18
 Women's Studies Advisory Council, 1996-99; subcommittee on Women and STS 2001-02
 American Studies Advisory Committee, 1991-2016
 Committee on Course Evaluations (elected), 1989-97
 Independent Majors Committee (elected), 2001-02
 Library Committee, 1996-97
 Dismissal Proceedings Committee, 2004-09
 Writing Across the Curriculum, Co-coordinator, 2001-05
 Promotion and Tenure Departmental Review Committees: Anthropology and African-American Studies,
 Art and American Studies, Education and Human Development (three: Chair of one), English,
 Chemistry, History, History and STS, Geology, Physics and Astronomy (four), Sociology,
 Women's Gender and Sexuality Studies
 Special Review Committee for Anthropology
 Sixth-Semester Review Committees: American/Women's Studies, Chemistry, Computer Science, English
 (two), Environmental Studies, History and STS, Philosophy, Physics and Astronomy (four: Chair
 of one), Sociology
 First Year Review Committees: Biology (three), English (two), Environmental Studies, History and STS,
 Physics and Astronomy (four)
 Contract Renewal Committee: Art, Art and American Studies, Education and Human Development
 Search Committees: Art, American Studies, Biology (two), Cultural Anthropology, Economics,
 Education and Human Development, Environmental Policy, Environmental Studies/GIS, Physics
 and Astronomy (five), Psychology, Sculpture, Science, Technology and Society (Chair of six),
 Italian
 Natural Science Division, NSF-AIRE grant steering committee, 1998-2003
 Mellon Foundation, environmental studies grant steering committee, 2001-2005
 Faculty liaison to the libraries for History of Science and STS, 1988-present
 Advisor of first-year, undeclared, and STS students, 1988-present
 Faculty mentor to Assistant Professor of East Asian Studies Hong Zhang, 2000; Assistant Professor of
 History Jason Opal, 2003; Assistant Professor of Economics Fei Yu, 2008
 Information Technology Committee, Academic Subcommittee, 2001
 Faculty Retreat Planning Committee, 1998
 Radiation Safety Committee, 1990-92
 Natural Science Core Curriculum Subcommittee, 1990-91
 Nominator and host for Colby College honorary degree recipients Leo Marx, Edward Norton Lorenz,
 Ralph Cicerone
 Faculty Associate, 1988-98, Faculty Associate Advisory Committee, 1993-94

SERVICE TO THE DISCIPLINE

American Academy of Arts and Sciences
 Invited Speaker, 2017
 American Association for the Advancement of Science
 Fellow, Elected 2003
 Roger Revelle Fellow in Global Environmental Stewardship, 2006-07
 Chair of Section L on History and Philosophy of Science, 2006-2009
 Chair of Section X on Societal Impacts of Science and Engineering, 2013-2016

- Historian/Advisor for *Science* magazine's "Pathways of Science," series, 1999-2000.
 Symposium organizer, "Sustaining the Global Climate," 2007.
 Symposium organizer, "Earth Observations from Space," 2008.
 Elected Member of Council, 2018-2020.
- American Geophysical Union
 AGU History Committee, 1988-present
EOS: Transactions of the American Geophysical Union, History Editor 1990-96
EOS History Editor Search Committee chair 1998
 All-Union session convener and speaker, 1987, 1991, 1996, 1998, 2005
 Session convener and speaker, 1994, 1996; invited speaker 2006; keynote speaker 2017
- American Historical Association
 Speaker 2004, 2016, Speaker and Session Organizer 2005, 2014, 2018
- American Meteorological Society
 Fellow, Elected 2011
 Historical Consultant, 1987-present
 AMS History Books Editor, 2011-2018
 Coordinator of the AMS Historical Research Network, 2017-
 History of the Atmospheric Sciences Committee, 1987-present, Chair 1996-2003
 Program Chair, Presidential Symposium on History, Long Beach, CA, 2003
 History Editor, *Bulletin of the American Meteorological Society*, 2002-present
 Established AMS annual Graduate Fellowship in the History of Science, 1998
 Editor of the AMS 75th anniversary history volume, 1994-96
 Invited speaker, 1998, 2003, 2007, 2020; Invited keynote speaker, 1999, 2012, 2016
 Co-author, AMS Policy Statement on Geoengineering the Climate System (2009, 2013),
http://www.ametsoc.org/policy/2013geoengineeringclimate_amsstatement.htm
- American Society for Environmental History, Speaker 2003, 2007, 2008, 2010
- Chinese Society for the History of Science and Technology, Committee on the History of Meteorological Science and Technology, Executive Member of the Council.
- Columbia University, New York City, Hertog Global Strategic Studies graduate seminar co-leader (with Prof. Matthew Connelly), Climate and Global Strategy, Summer 2013
- Dibner Institute for the History of Science and Technology, Co-organizer and session leader on climate change, Seminar on Oceans and Atmospheres, Woods Hole, May 2006
- Government Accountability Office. Center for Science, Technology, and Engineering, *Climate Engineering: Technical status, future directions, and potential responses*. GAO-11-71, July 2011
- History of Cartography* 6 (University of Chicago Press), Advisory Editor, 2004-05
- History of Earth Sciences Society, Associate Editor, *Earth Sciences History*, 2002-07
- History of Science Society
 Speaker 1987, 1990, 1998; Invited speaker 1992, 1995, 1999, 2003, 2012, 2015, 2017; Session convener 1990, 1994, 2001; Invited chair and commentator 1995, 1996, 1997, 2001, 2011, 2013, 2015, 2019
Syllabus Sampler, 1992
 Forum for the History of Science in America (FHSA), Steering Committee, 1993-95, 1996-99;
 FHSA Article and Book Prize Committee 1993-94, Chair 1994; FHSA Distinguished Lecturer, 2012; Book Prize Committee 2016.
 Schuman (now Reingold) Prize Committee, 1999-2001, Chair 2001
 Advisory Board, *Isis*, 2000-03
 Nominating Committee, 2005
 Washington Representative, 2006-07
 Editor, *Osiris* 26, Klima, 2011
 Member of Council, 2014-17
 Member of the Committee on Meetings and Programs, 2015-17

- Intergovernmental Panel on Climate Change (IPCC)
 Contributing Author, Ch. 1: “Historical Overview of Climate Change Science,” 2007.
 Expert Reviewer, Working Groups II and III of the Fifth Assessment Report (AR5), “Climate Change 2013: Impacts, Adaptation, and Vulnerability.”
 Expert Reviewer, Working Group III (Mitigation) of the Fifth Assessment Report (AR5),
- International Commission on the History of Meteorology (ICHM)
 Founder and first President, 2000-2005; Senior Advisor, 2006-present
 Editor-in-Chief of *History of Meteorology*, <http://meteohistory.org/scholarship/history-of-meteorology>, 2001-2017.
 Affiliate of International Council for Science (ICSU), 2001-2005
 Affiliate of International Union of History and Philosophy of Science (IUHPS), 2000-2005
 Affiliate of International Association for Meteorology and Atmospheric Science (IAMAS), 2003-2005
 Co-convener, “Weather, Local Knowledge, and Everyday Life,” Rio de Janeiro, Brazil, 2008.
 International Program Committee, International Congress of History of Science, Beijing, China, 2005.
 Convener, Symposium on “Diversity in the Global Reconstruction and Representation of Weather and Climate: East, South, West, North,” International Congress of History of Science, Beijing, China, 2005.
 Co-convener, International Conference, "From Beaufort to Bjerknes and Beyond: Critical perspectives on observing, analyzing and predicting weather and climate," Polling Monastery, Weilheim, Germany, 2004.
 Convener, Symposium on “International Perspectives on the History of Meteorology: Science and Cultural Diversity,” International Congress of History of Science, Mexico City, 2001.
 Seminar Convener, “Gaining It, Losing It, Regaining It (?), ICHSTM, Manchester, 2013.
- National Academy of Sciences/ National Research Council
 Committee on Geoengineering: Technical Analysis and Discussion of Impacts, 2013-2015
 Speaker, America’s Climate Choices, 2010
 Speaker, Government, Industry, Research Roundtable, 2010
 Committee on Scientific Accomplishments of Earth Observations from Space, 2006-07
- National Aeronautics and Space Administration
 Peer review panelist for History of Scientific Exploration of Earth & Space program, 2007
 Invited speaker, 2008, 2009
- National Association of Science, Technology, and Society
 Institutional Members Advisory Council, 1993-2000
 Session convener and speaker 1997; Session convener and chair 1999
- New Dictionary of Scientific Biography* (Scribners),
 Associate Editor, Meteorology, Hydrology, and Oceanography, 2005-07
- Organization of American Historians, Speaker 2008.
- Palgrave-Macmillan. Series editor, Palgrave Studies in the History of Science and Technology. New York
 JCSEPHS, Joint Caucus for Socially Engaged Philosophers and Historians of Science, founding member
 Rutgers University Press
 Editorial Advisory Board for History of Science, Technology, and Environment series
- Serbian Academy of Sciences
 International Program Committee Member and Invited Speaker, “Milutin Milankovitch Anniversary Symposium, Belgrade, Serbia, August 2004
- Society for the History of Technology
 Session convener and speaker, 1994
 Session convener and commentator, American Historical Association, Seattle, 2005
 Speaker, 2009, 2010, 2015
- Smithsonian Institution

Co-convener, “Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years,” October 31-November 1, 2007.
 Member, Editorial Advisory Committee, *The Papers of Joseph Henry*, 1993-2001
 Liaison to AGU for the Smithsonian's 150th anniversary celebration, 1995-96
 External reviewer for Smithsonian historian/curator evaluations, 1996, 2001, 2006, 2017
 Swedish Academy of Sciences, Invited Speaker 2017
 Swedish Foundation for Strategic Environmental Research
 Mistra Environmental Humanities Initiative, <http://www.mistra.org/>, Consultant and white paper co-author, 2012-13. Nye, David E., Rugg, Linda, Fleming, James and Emmet, Robert, ‘The Emergence of the Environmental Humanities’ (2013), http://www.mistra.org/download/18.7331038f13e40191ba5a23/Mistra_Environmental_Humanities_May2013.pdf
 Vienna International Summer University (VISU), Invited Principal Lecturer, “Climate Studies,” 2013.
Wiley Interdisciplinary Reviews on Climate Change, editor for history, society, culture, 2005-2010.
 University of Kansas -- NSF IGERT Advisory Committee, 2007.
 Deutschen Meteorologischen Gesellschaft
 Ausländisch Autorität, Fachausschuß Geschichte der Meteorologie, 1998-present
 American Philosophical Society
 Mellon Library Fellow, 1991
 Invited speaker, Conference on North American Scientific Exploration, 1997
 Massachusetts Institute of Technology
 Faculty workshop on “The Humanities and the Environment,” 1991-95
 Workshop advisory committee, 1991-93
 Invited speaker, 1991, 2000, 2009, 2012, 2016, 2019
 Carnegie Institution of Washington, History of geophysics committee, 1992
 Garland Press, Advisory Board, *History of Geosciences Encyclopedia*, 1991-95

MANUSCRIPT AND PROPOSAL REVIEWS

Isis, *Environmental History*, *British Journal for the History of Science*, *Technology and Culture*, *American Historical Review*, *Notes and Records of the Royal Society*, *Journal of Women's History*, *Environment and History*, *Great Plains History*, *Bulletin of the American Meteorological Society* and other AMS publications, *EOS*, *Transactions of the American Geophysical Union* and other AGU publications, *Proceedings of the American Philosophical Society*, *Proceedings of the National Academy of Sciences*, *Climatic Change*, *History of Meteorology*, *History of Science*, *Physical Geography*, *Choice*, Columbia University Press, Johns Hopkins University Press, Oxford University Press, MIT Press, Princeton University Press, University of Pittsburgh Press, SUNY Press, University of Chicago Press, University of Michigan Press, Syracuse University Press, University of North Carolina Press, McGraw-Hill Inc., Routledge, Rowman and Littlefield, University of Alabama Press, Wiley-Blackwell, Yale University Press, Palgrave-Macmillan, US National Science Foundation, Austrian National Science Foundation, University of Strasbourg Institute for Advanced Study

REFERENCES WILL BE PROVIDED ON REQUEST