Joseph A. November

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Education:

Princeton University, M.A., History, 2002; Ph.D., History, 2006
University of Chicago, M.A., Social Sciences, 1999
Hamilton College, B.A., History, Biology (minor), 1997

Academic Affiliations:

Associate Professor, Department of History, University of South Carolina	2012-present
Assistant Professor, Department of History, University of South Carolina	2006-2012
DeWitt Stetten Fellow, National Institutes of Health	2007-2008
Lecturer, Department of History, Princeton University	2005-2006
Visiting Scholar, Stanford University	2004

Research Grants and Awards:

Peter and Bonnie McCausland Faculty Fellowship, Univ. of South Carolina	2013-present
Computer History Museum Prize (book award for *Biomedical Computing*)	2013
Association for Computing Machinery History Fellowship	2013-2014
Charles Babbage Institute Arthur Norberg Travel Grant	2013
NSF/UCSB-CNS: "Innovation & Research at the Nano-Bio Interface"	2010-2016
National Institutes of Health DeWitt M. Stetten, Jr. Fellowship	2007-2008
National Science Foundation Dissertation Improvement Grant	2003-2004
Princeton University: Bowen Merit Fellowship	2000-2005
Hamilton College: Arthur M. Levitt Scholarship	1996-1997

Publications:

Book:

Joseph A. November, *Biomedical Computing: Digitizing Life in the United States* (Baltimore: Johns Hopkins University Press, 2012). [Winner of 2013 Computer History Museum Prize]

Refereed Articles:

Joseph A. November, "Removing the Center from Computing: Biology's New Mode of Digital Knowledge Production (Wie das Rechenzentrum aus der Datenverarbeitung verschwand: Die neue Form digitaler Wissensproduktion in der Biologie)," *Berichte zur Wissenschaftsgeschichte* 34, no. 2 (June 2011), 156-173.

Joseph A. November, "Early Biomedical Computing and the Roots of Evidence-Based Medicine," *IEEE Annals of the History of Computing* 33, no. 2 (Apr-Jun 2011), 9-23.

Joe November, "LINC, Biology's Revolutionary Little Computer," *Endeavour*, 28 (2004), 125-131.

Book Chapters:

Joseph November, "George Forsythe, the ACM, and the Creation of Computer Science As We Know It." In Thomas J. Misa (ed.), *Communities of Computing: Computer Science and Society in the ACM* (New York: Association for Computing Machinery and Morgan & Claypool, 2016), 47-70.

Joseph A. November, "*Fallout* and Yesterday's Impossible Tomorrow." In Matthew Kapell and Andrew B.R. Elliott (eds.), *Playing with the Past: Digital Games and the Simulation of History* (New York: Continuum/Bloomsbury Press, 2013), 297-312.

Joseph A. November, "Computational Power and the Dilemma of Statistics or Simulations in Biomedicine," in *Thinking by Numbers: Mathematizing the Natural and Human Built World,* eds. Ann Johnson and Johannes Lenhard [draft submitted, July 2012].

Encyclopedia Entries:

"Computed Tomography," *Discoveries in Modern Science*: *Exploration, Invention, Technology* (Vol. 1), ed. James Trefil. (Farmington Hills, MI: Macmillan Reference USA, 2015). 207-209. *Gale Virtual Reference Library*. Web. 9 Dec. 2014.

"National Institutes of Health," entry in *Encyclopedia of Nanoscience and Society*, Sage Publications, 2010.

"George Elmer Forsythe," entry in *The New Dictionary of Scientific Biography* (2007), Charles Scribner's Sons.

Non-Refereed Written Contributions:

Think Piece: "Ask Your Doctor… About Computers," *IEEE Annals of the History of Computing* 38, no. 1 (Jan. – Mar., 2016): 3-5. (https://doi.org/10.1109/MAHC.2016.5)

"Heading toward a national computer health system?" guest post on JHU Press Blog, Oct. 14, 2013. URL: http://jhupressblog.com/2013/10/14/heading-toward-a-national-computer-health-system/

"The Other 2012 Prophecy," guest post on AmericanScience Blog (Forum for the History of Science in America), Nov. 21, 2012. URL: http://americanscience.blogspot.com/2012/11/the-other-2012-prophecy.html

"NIH's First Computers" in "NIDDK Laboratory of Biological Modeling Turns 50," *NIH Record*, Volume LIX Number 24 (November 30, 2007).

<u>Reviews</u>:

Review of *Engineering and Technology Wiki* (ethw.org), *Journal of American History*, 104, no. 2 (2017): 575–576. (https://doi.org/10.1093/jahist/jax305)

Review of *Gene Jockeys: Life Sciences and the Rise of Biotech Enterprise* (Nicholas Rasmussen), *Isis* 106, no. 4 (March 2016): 206-208. (https://doi.org/10.1086/686212)

Review of *Digital State: The Story of Minnesota's Computing Industry* (Thomas J. Misa), *Journal of American History* 101, no. 4 (2015): 1316-1317. (https://doi.org/10.1093/jahist/jav113)

Review of *Computer: A History of the Information Machine – Third Edition* (Martin Campbell-Kelly, William Aspray, Nathan Ensmenger, Jeffrey R. Yost), *IEEE Annals of the History of Computing* 36, no. 4 (Oct-Dec, 2014), 87-88. (https://muse.jhu.edu/article/564927)

Review of *The Future Was Here: The Commodore Amiga* (Jimmy Maher), *Technology and Culture* 55, no. 2 (April 2014), 513-515. (https://muse.jhu.edu/article/546892)

Review of *Biology, Computing, and the History of Molecular Sequencing: From Proteins to DNA, 1945-2000* (Miguel García-Sancho), *Isis* 104, no. 3 (Sep. 2013), 647-648. (http://www.jstor.org/stable/10.1086/674511)

"When Women Were Computers," review of *Top Secret Rosies* [documentary film] (LeAnn Erickson), *Technology and Culture* 52, no. 4 (October, 2011), 788-791. (http://www.jstor.org/stable/23020526)

Review of *The Computer Boys Take Over* (Nathan Ensmenger), *IEEE Annals of the History of Computing*. 33, no. 2 (Apr-Jun 2011), 102-103. (https://doi.org/10.1109/MAHC.2011.46)

Review of *The Internet and American Business* (William Aspray and Paul E. Ceruzzi (eds.)), *Business History Review*, 83:3 (2009), 641-642.

Review of *An Unfinished Revolution? Heinz von Foerster and the Biological Computer Laboratory / BCL 1958-1976* (Albert Müller and Karl H. Müller (eds.)), *History and Philosophy of the Life Sciences*, 30:1 (2008).

Review of *Biocapital* (Kaushik Sunder Rajan), *Isis*, 99:1(2008), 225-227.

Review of *Designs for Life: Molecular Biology after World War II* (Soraya de Chadarevian), *Annals of Science*, 61 (2004), 517-519.

Review of *Meselson, Stahl, and the Replication of DNA: A History of "The Most Beautiful Experiment in Biology* (Frederic Lawrence Holmes), *Ambix*, 51 (2004), 94-95.

Review of *The Misunderstood Gene* (Michel Morange), *History and Philosophy of the Life Sciences*, 25 (2003), 555-557.

Dissertation:

"Digitizing Life: The Introduction of Computers to Biology and Medicine," Department of History, Princeton University. 2006. Advisors: Michael S. Mahoney, Angela N.H. Creager. Readers: Michael Gordin (Princeton University), Soraya de Chadarevian (University of Cambridge).

Professional Papers, Lectures, Presentations:

"The Medical Record and the 50-Year Challenge to Computing," SIGCIS History of Computing Workshop, Albuquerque, New Mexico, October 11, 2015.

"George Forsythe, the ACM, and Creating a 'Science of the Artificial,'" in session: Artificial Sciences? Technology Education, and Professional Networks in Early Computing (organizer: Thomas Misa), The Society for the History of Technology (SHOT), Albuquerque, New Mexico, October 9, 2015.

"Gaming for the Cure" in panel "New Histories of Medical Technology: Information, Infrastructure and Identity" (organizer, Jeremy Greene), American Association of the History of Medicine (AAHM), New Haven, CT, May 2015.

"Ahead of Sequence: Robert Ledley and the Question of Early Sequencing at NIH," Capturing the Historical Legacy of the National Human Genome Research Institute, NHGRI, National Institutes of Health, Bethesda, MD, April 29-30, 2015.

Commentator and Chair for session "Beyond the Machine: Applications of Information Technologies" (organizer, Andrew Russell), The Society for the History of Technology (SHOT), Dearborn, Michigan, Nov. 8, 2014.

"History of Computing," guest lecture for ENGL 620 / LING 505 / POLI 803 (Research Methods in Digital Humanities) graduate seminar, July 15, 2014.

"Revolutions@Home," NYC History of Science Working Group, New York University, April 11, 2014.

"Revolutions@Home," Humanities Forum, Stevens Institute of Technology, March 19, 2014.

"Revolutions@Home," Department of History of Science and Technology Colloquium, Johns Hopkins University, Feb. 27, 2014.

Commentator for session, "New Wine in Old Bottles? Tensions Between Computer Science and Traditional Disciplines," SIGCIS History of Computing Workshop, Portland, ME, October 13, 2013.

"The Cochrane Collaboration Beyond Cochrane, 2013 International Congress of History of Science, Technology and Medicine (ICHSTM 2013), Manchester, UK, July 22, 2013.

"Video Games and History," Center for Digital Humanities, University of South Carolina, March 20, 2013. Talk video and related links: http://cdh.sc.edu/DBB01

Moderator for session, "Representations of Medicine and Health in Plays, Prose and Poetry," Southern Association for the History of Medicine and Science, Charleston, SC, Feb. 22, 2013.

"Engineering a Better Medicine," The Society for the History of Technology (SHOT), Copenhagen, Denmark, October 6, 2012.

"Computational Power and the Dilemma of Statistics or Simulations in Biomedicine," The Effectiveness of Mathematization, Workshop at the Center for Interdisciplinary Research (ZiF), Bielefeld University, Bielefeld, Germany, August 9 – August 12, 2012.

"Macromodules, Miniaturization, and the CPU's Brief Removal from the Black Box," SIGCIS History of Computing Workshop, Cleveland, OH, November 6, 2011.

"Early Electronic Digital Computers and the Effort to Build a Better Biomedicine in Postwar America," BiCoDa Conference: Research in its Technological Setting, Center for Interdisciplinary Research (ZiF), Bielefeld University, Bielefeld, Germany, June 29 – July 2, 2011.

"Statistics or Simulations: The Dilemma Facing Early Adopters of Computing in Biology and Medicine," Progress By Design: Mathematization in Science and Engineering from the Enlightenment to the Personal Computer, Center for Interdisciplinary Research (ZiF), Bielefeld University, Bielefeld, Germany, June 24-26, 2011.

"Staying Afloat in the 'Flood of New Information:' Computers in America's Cold War Scientific Data Crisis," in session "Taming the Information Beast (organizers, Isabelle Charmantier and Bruno Strasser), History of Science Society (HSS), Montreal, Canada, November 2010.

"Organization and Information at the Dawn of Biomedical Computing," Institut für Zeitgeschichte. Universität Wien, Vienna, Austria, June 24, 2010.

"Removing the Center from Computing: Biology's New Mode of Digital Knowledge Production," XLVII. Symposium der Gesellschaft für Wissenschaftsgeschichte, "Skriptorium – Labor – Rechenzentrum: Räume zwischen Materialisierung und Idealisierung," Heinz Nixdorf MuseumsForum, Paderborn, Germany, May 15, 2010.

"Yesterday's Computerized Medicine, America's Future Medicine," New Voices, New Topics Workshop (Sponsored by the Charles Babbage Institute and IEEE), University of Texas School of Information, Austin, TX, April 2, 2010.

"The Computer as File Cabinet or Oscilloscope: Two Computings of Biomedical Research," Michael Mahoney And The Histories of Computing(s), SIGCIS History of Computing Workshop in Memory of Michael S. Mahoney, Pittsburgh, PA, October 18, 2009.

"'Metal Brains' and the Mathematized Biology of the Past's Future," Virginia Tech STS Seminar Series. Commentator: Richard Burian. Blacksburg, VA, September 25, 2009.

"Reading the Computer: What One Machine Can Tell Us About 'The Many Histories of Computing,'" The Historical Career of Michael Sean Mahoney, Princeton, NJ, May 15, 2009.

"From OR to PR: Robert S. Ledley and the Operation Research Roots of Pattern Recognition" International Conference for Pattern Recognition, Tampa, FL, December 10, 2008. (At invitation of Elsevier and National Biomedical Research Foundation)

"Transistorized Transdisciplinarians: Computers and the Quest to Unify Biology," Joint Meeting of the BSHS, CSHPS, and HSS (3 Societies), Oxford, UK. July 2008. (Organizer for session, "Computing Without Borders: How Information Technology Crossed and Redefined Disciplinary Lines".)

DeWitt Stetten Lecture, "The Forgotten Revolution: Early Biomedical Computing at the NIH," NIH Clinical Center, May 16, 2008.

"Computing and the Reasoning Foundations of Medical Diagnosis," American Association of the History of Medicine (AAHM), Rochester, NY. April 11, 2008.

Public Lecture: "A Lifetime of Biomedical Computing: A Conversation with Robert Ledley," conducted with Robert Ledley, Lister Hill Auditorium (NIH), February 21, 2008.
Archived: (http://web.archive.org/web/20090704213053/http://dcb.cit.nih.gov/events/Dr.%20Joe%20November%20-%20A%20Lifetime%20in%20Biomedical%20Computing/)

"'Planting the Seeds': How the NIH Cultivated Biomedical Computing," History of Science Society (HSS), Arlington, Virginia. November 2, 2007. (Organizer for session: "The Elephant in the Room: Finding a Place for the NIH in Biomedical History".)

"Towards 'Bioengineering': Computerization and Futurism at the NIH," The Society for the History of Technology (SHOT), Washington, DC. October 19, 2007.

"Computers and the Unintended Demathematization of Biology," Society for Social Studies of Science (4S), Montreal, Canada. October 12, 2007.

"A Place for Nanotechnology in the History of Biology (or vice-versa)," nanoSTS Science Studies Seminar Series, University of South Carolina, November 28, 2006.

"Martians, Expert Systems, and the American Search for Order," Clemson University STS Brownbag Series. October 20, 2006.

"LINC, Biology's Revolutionary Little Computer," History of Science Society, Minneapolis, Minnesota. November 2005.

"'Information Vital for the Life Scientist:' Biocomputing at Stanford University, 1963-1980," International Society for the History, Philosophy, and Social Studies of Biology, Guelph, Ontario, Canada. July 2005.

Class Guest Lecture, "A Brief History of Computers in Biology," History 396, History of Biology (Angela Creager), Princeton University. April 25, 2005.

"DENDRAL: Automating Hypothesis Formation," History of Science Society, Austin, Texas. November 2004.

Class Guest Lecture, "Computers in the Laboratory: The LINC Between the Designer and the User," STS.035, The History of Computing (Slava Gerovitch), Massachusetts Institute of Technology. April 7, 2004.

"'Impossible By Any Other Means:' Early Advocacy for Computers in Biology," History of Science Society, Cambridge, Massachusetts. November 2003. Joint Atlantic Seminar for the History of Biology, New York, NY, April 2003.

"The Organism as Tape: Information and the One-Dimensional Model of the Gene," History of Science Society, Denver, Colorado. November 2001.

Teaching Experience:

University of South Carolina, Department of History

Fall 2017:   History 108:   Science and Technology in World History
                History 393:   History of the Life Sciences

Summer 2017: History 108:   Science and Technology in World History

Spring 2017: History 108:   Science and Technology in World History
                History 314:   Video Games and History

Fall 2016:   History 451:   History of Medicine in America
                History 391:   Information Technology Revolutions

Spring 2016: History 108:   Science and Technology in World History
                History 314H (SCHC): Video Games and History

Fall 2015:   On leave

Spring 2015:   History 451:   History of Medicine in America
                History 493:   Video Games and History

Fall 2014:   History 108:   Science and Technology in World History
                History 700:   Graduate Seminar: Information Age: Global Perspectives

Spring 2014:   On leave

Fall 2013:   On leave

Spring 2013:   History 451:   History of Medicine in America
                History 492C: Computer Games and History

Fall 2012:   History 391:   Information Technology Revolutions
                History 393:   History of the Life Sciences

Spring 2012:   History 108:   Science and Technology in World History
                History 700Y: Graduate Seminar: History of Race and Science

Fall 2011:   History 108:   Science and Technology in World History
                History 108 (SCHC): Science and Technology in World History

Spring 2011:   History 391:   Information Technology Revolutions
                History 451:   History of Medicine in America

Fall 2010:   History 393:   History of the Life Sciences
                History 300:   The Historian's Craft

Spring 2010:   On leave

Fall 2009:   History 108:   Science and Technology in World History
                History 497C: Senior Seminar: The Scientific and Technological Legacies of WWII

Spring 2009:   History 393:   History of the Life Sciences
                History 700V: Graduate Seminar: History of Race and Science

Fall 2008:   History 108:   Science and Technology in World History
                History 492P: Information Technology Revolutions

Spring 2008:   On leave

Fall 2007:   On leave

Spring 2007:   History 300:   The Historian's Craft

        History 493B: History of the Life Sciences

Fall 2006:   History 112 (SCHC): U.S. Since 1865
               History 452 (SCHC): History of Information Technology

Princeton University

Preceptor, History 292, Science in the Modern World (Michael Gordin), Fall 2005.

Preceptor, History 398, Technologies and Their Societies: Historical Perspective (Michael Mahoney), Fall 2004, Fall 2005.

Preceptor, Woodrow Wilson School of Public and International Affairs / Molecular Biology 320, Human Genetics, Reproduction, and Public Policy (Lee Silver), Spring 2003.

Departmental and University Service

Member, Tenure and Promotion Committee, Department of History, University of South Carolina, Fall 2014-Spring 2016.

Reviewer, SPARC Review Committee, University of South Carolina, Spring 2016

Reviewer, ASPIRE II Grant Review Committee, University of South Carolina, Spring 2016.

Member, Graduate Committee, Department of History, University of South Carolina, Fall 2010- Spring 2011, Fall 2014-Spring 2015. Fall 2017-present

Director of Undergraduate Studies, Department of History, University of South Carolina, Fall 2012-Spring 2013.

Member, Provost's Committee on Distributed Learning, University of South Carolina, Fall 2012-Spring 2013.

Member, Undergraduate Committee, Department of History, University of South Carolina, Fall 2010 – Spring 2012.

Member, Executive Committee, Department of History, University of South Carolina, Fall 2008 – Fall 2009.

Member, Web Committee – Department of History, University of South Carolina, Fall 2006 – Spring 2008.

Member, Alternative Energy Committee, University of South Carolina, Fall 2006 – Spring 2007.

Participant, STEM Cell (Science, Technology, Engineering, and Medicine) discussion group, Department of Philosophy, University of South Carolina, 2006-present.

Participant, HoSTE (History of STEM) discussion group, Department of History, University of South Carolina, 2008-present.

Extramural Professional Activities:

Member, Computer Museum Prize Committee, 2014-2016 (Chair 2015)

Judge, Robinson Prize Committee, Society for the History of Technology (SHOT), 2012, 2014.

Member, Society for the History of Technology (SHOT) NASA Fellowship Committee, 2012-2014 (Chair, 2013).

Program Committee Chair, Michael Mahoney And The Histories of Computing(s), SIGCIS History of Computing Workshop in Memory of Michael S. Mahoney, Pittsburgh, PA, October 18 2009.

Student, FAES course, BIOC 319: Insights into Nanobiotechnology, (Fall 2007)

Communications Officer, Special Interest Group, Computers, Information and Society (SIGCIS). 2007-2009.

Webmaster, Association for Computing Machinery, History Committee, 2005 - 2006.

Manuscript Reviewer: Johns Hopkins University Press, MIT Press, University of Chicago Press, Oxford University Press, University of Pittsburgh Press, and others.

Professional Society Memberships:

The Society for the History of Technology
History of Science Society

Professional Computer Experience:

Statistical Analyst/Research Assistant, Department of Human Genetics, The University of Chicago. Developed Unix-based statistical analysis software for major genetics laboratory. (Spring 1999 – Spring 2000)

Database Manager, Insignia/ESG, Washington, D.C. Designed and implemented regional and national-scale personnel databases. (Spring 1998 – Summer 1998)

AS/400 Operator, American Society of Health-Systems Pharmacists, Bethesda, Maryland. Assisted in daily operations of ASHP's IBM AS/400 mainframe. (Fall1997 – Winter 1998)

Database Intern, Communications and Development Office, Hamilton College. Designed and constructed databases to track grants and scholarships. (Summer 1997)

Network Technician, The Arthur M. Levitt Public Affairs Center, Hamilton College Remodeled and maintained website and conducted network-related tasks. Aided students and faculty with projects involving the Internet. Also worked at helpdesk. (September 1996 – August 1997)

Contractor, Lab for Astrophysics, Smithsonian Institution, Washington, D.C. Maintained lab's computer network (Unix and Windows) and designed lab's web page (HTML and CGI). Helped reorganize lab's financial system. Assisted with construction of Fabry-Perot filters. (December 1994 – January 1995, and Summer 1995)

Technical:

Experienced SQL and Visual Basic programmer
Proficiency in Unix and AS/400 operations
Proficiency in SPSS
Proficiency in HTML and CGI
Some C and C++ programming

Languages:

English (native speaker and writer)
French (speaking and writing proficiency)
German (reading proficiency)