

Tomash Conferences Debut in Deep Woods

On Thursday through Sunday, September 10-13, past Tomash fellows, along with other leading scholars in the history of computing, gathered at the serene and picturesque setting of Seven Pines Lodge in the woods of Northwest Wisconsin for the first annual Tomash Conference.

The theme of the conference, "The Computer As a Scientific Instrument," based upon an ongoing NSF-sponsored CBI project of the same name, was the focus of the of the first day of the event. Each of the three principle investigators of the project gave talks based on their research.

On Friday, Bob Seidel spoke on "Scientific Computing and High-Energy Physics," Joel Hagen on "Automating Biology: The Reception of Computers by Taxonomists and Evolutionary Biologists During the 50's and 60's," and Stephen Johnson on "Computing and Cognitive Psychology."

A lively debate followed on relationships between computing and the physical, biological, and social sciences. The project will have the challenge of integrating the findings on the use of the computer as a scientific instrument in different sciences.

William Aspray gave the keynote address on "The History of Computing Outside the Academic Context."

Past Tomash fellows filled Saturday with presentations of works in progress:

Jeff Yost Signs on as CBI Associate Director

Jeffrey Yost, an historian of technology, joined CBI as the Associate Director at the beginning of September. Originally from Lincoln, Nebraska, Jeff did his undergraduate work at Macalester College in St. Paul. He is very pleased to have the opportunity to return to the Twin Cities after being away for the past seven years.

At Macalster Jeff studied American history, played intramural sports and had a radio show. A religious studies course he took in technology and ethics inspired Jeff to pursue the history of technology as a career goal.

Jeff studied the history of technology and science with Caroli Pursell at Case Western Reserve University and completed his dissertation, "Components of the Past and Vehicles of Change: Parts Manufacturers and Supplier Relations in the U.S. Automobile Industry," this spring. He explored how organizational

Rik Nebeker on "Discipline Boundaries: The Case of Signal Processing and Computer Science and Engineering" and Shane Greenstein on "Looking for Computing History in Contemporary Events: Universal Access and Local Commercial Internet Markets."

Acting CBI Archivist Pat Hemmis depicted "The Role of Analogy in Popular Descriptions of Early Computers" using slides from CBI collections,



structure influenced component innovation from 1900 to 1920.

While in graduate school, Jeff was a consulting historian for the Winthrop Group, Inc., the leading corporate history writing firm, where he helped Bettye Pruitt write *Timken: From Missouri to Mars--A Century of Leadership* (Harvard Business School Press, 1998).

During graduate school Jeff also worked as a researcher for the Center for Regional Economic Issues at Case Western as well as a curatorial researcher at the Dittrick Museum of medical technology.

As the new Associate Director of CBI, Jeff looks forward to conducting research projects on the information processing industry and enjoying bicycling, running, and cross country skiing in the extensive Twin Cities parks system. □

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Recent Publications

Babbage, Charles. *The History of Science and Technology* (Marlborough, Wiltshire, England: Adam Matthew Publications, 1997).

Burks, Alice R. and Arthur W. Burks. "Who Invented the Computer: A Memoir of the 1940s" *Michigan Quarterly Review* 36:2 (Spring, 1997) 223.

Ceruzzi, Paul E. *A History of Modern Computing* (Cambridge: MIT, 1998).

Cohen, I. Bernard. *Howard Aiken: Portrait of a Computer Planner* (Cambridge: MIT Press, 1999).

Cohen, I. Bernhard. "Howard Aiken on the Number of Computers Needed for the Nation" *IEEE Annals of the History of Computing* 20:3 (July-Sept., 1998) 27-32.

Cohen, I. Bernard, et. al., eds. *Makin' Numbers: Howard Aiken and the Computer* (Cambridge: MIT Press, 1999).

Collier, Bruce. *Charles Babbage and the Engines of Perfection* (New York: Oxford University Press, 1998).

Copeland, Jack B. "On Alan Turing's Anticipation of Connectionism" *Synthese* 108 (1996) 361-377.

De Wit, Dirk. "The Construction of the Dutch Computer Industry: The Organizational Shaping of Technology" *Business History* 39:3 (July, 1997) 81-104.

Fontana, Michela. *Percorsi Calcolati: Le Nuove Avventure Della Matematica* (Recco, Genova:Le Mani, 1996).

Foresman, Timothy W. *The History of Geographical Information Systems: Perspectives From the Pioneers* (Upper Saddle River, NJ: Prentice Hall, 1998).

Fox, Barry and Jeremy Webb. "Colossal Adventures" *New Scientist* 154:2081 (May 10, 1997) 38(6).

Gray, George and Ron Smith. "Sperry Rand's Transistor Computers" *IEEE Annals of the History of Computing* 20:3 (July-Sept., 1998) 16-26.

Grier, David Alan. "The Math Tables Project of the WPA: The Reluctant Start of the Computing Era" *IEEE Annals of the History of Computing* 20:3 (July-Sept., 1998) 33-50.

Levenstein, Margaret. *Accounting for Growth: Information Systems and the Creation of the Large Corporation* (Stanford: Stanford University Press, 1998).

Loevinger, Lee. "The Invention and Future of the Computer" *The John Marshall Journal of Computer and Information Law* 15 (Fall, 1996) 21-38.

Mackenzie, Adrian. "Undecidability: The History and Time of the Universal Turing Machine" *Configurations: A Journal of Literature, Science, and Technology* 4 (1996) 359-379.

Naumann, Friedrich. "Computer in east and west: Wurzeln, Konzepte und Industrien zwischen 1945 und 1990" *Technikgeschichte* 64 (1997) 125-144.

Quittner, Joshua. *Speeding the Net: The Inside Story of Netscape and How it Challenged Microsoft* (New York: Atlantic Monthly Press, 1998).

Ronfeldt, David F., ed. *The Zapatista "Social Netwar" in Mexico* (Santa Monica: Rand, 1998).

Shelburne Brian J. and Christopher P. Burton. "Early Programs on the Manchester Mark I Prototype" *IEEE Annals of the History of Computing* 20:3 (July-Sept., 1998) 4-15.

Spencer, Donald D. *The Timetable of Computers* (Ormond Beach, Fla.: Camelot Publishing Co., 1999).

Strathern, Paul. *Turing & the Computer* (New York: Anchor Books, 1997).

New Directions in the History of British Computing

by David Clark, University of Warwick

The British Society for History of Science conference on "New Directions in the History of British Computing" 16-17 June 1998, was one of a dozen satellite conferences to the 50th Anniversary of the "Baby" celebration.

Once the rare tool of big science, fifty years later a computer is a toy for home entertainment; the ubiquitous intermediary of commerce and communication. New tools change cultures: *New Directions* reflected upon the assimilation of these "thinking machines" and the consequences for historiography.

There is an historiographical move away from calculating and physical machines - the artifactual roots of computing, with greater attention to the virtual machines existing in software.

Doran Swade described the tension between Babbage and Airy in assessing utility. Pragmatic Airy looked for replication of existing tasks, visionary Babbage was looking toward new things. Chris Burton explained the motivation

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Swisher, Kara. *AOL.COM: How Steve Case Beat Bill Gates, Nailed the Netheads, and Made Millions in the War for the Web* (New York: Times Business, 1998).

Wertheim, Margaret. *The Pearly Gates of Cyberspace: A History of Space From Dante to the Internet* (New York: W.W. Norton, 1999).

Wheeler, David L. "An Ancient Feud: Who Invented the Computer?" *The Chronicle of Higher Education* 44:6 (1997) B2. □

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Manchester, Paderborn Stake Claims

Recognition and reconstruction were the goals in the 50th Anniversary of the Manchester "Baby" Computer and the Paderborn International Conference on the History of Computing this summer.

The 50th Anniversary of "Baby," the world's "first stored program computer" was celebrated in Manchester's Bridgewater Hall on June 17. Pomp and circumstance was leavened by a skit, a speech by Tom Kilburn, whose team built "Baby," and a satellite transmission of a working reconstruction of the computer. Its builder Chris Burton and Kilburn received honorary degrees. A Hallé orchestra concert followed.

A two-day Golden Anniversary conference featured talks by Kilburn and his teammates and developers of later computers at Manchester. Exhibits at the Manchester Museum and the Manchester Museum of Science and Industry supplemented an "Open Day" at the University.

The theme of reconstruction was pursued with greater thoroughness at Paderborn, where the International Conference of the History of Computing

was held in August. Presentations of accounts of early computers ranged from Atanasoff to Zuse.

CBI Trustee I. B. Cohen of Harvard presented the first public lecture of the conference, "Howard Aiken and the Harvard Mark I: The Dawn of the Computer Age," after a series of papers on early German, English, and American computers.

Descriptions of reconstructions of the EDSAC in software, and the "Baby" in hardware were followed by a discussion of the Atlas and Zuse's Z1 and Z3 computers.

CBI Director Bob Seidel suggested that museum and virtual reconstructions should transcend their focus on the artifact by incorporating political, social, and economic factors.

The Conference's final session posed the question "Who invented the first computer?" No one was selected although Konrad Zuse was voted their "favorite computer builder" by the overwhelmingly German audience.

The Paderborn conference afforded an opportunity to historians to visit the new Heinz-Nixdorf Museumsforum. It provides a suitable venue for conferences relating to computing, as well as a stunning overview of the history of computing and, particularly, of the Nixdorf Computer's history.

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Magnetic History Attracts Attention

The 100th anniversary of magnetic recording will be celebrated December 14 at Santa Clara University by the Center for Science, Technology and Society and the Institute of Information Storage. Speakers will include James Vanderslice, Vice President of IBM, Al Hoagland, CBI Trustee and Founder, and Eric Brewer of the University of California Berkeley. Interested readers can contact the Institute at 408 554-6853 or <http://www.iist.scu.edu>.

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Hemmis puts art in archivery



Patricia Hemmis has joined the staff of the Charles Babbage Institute as the Acting Archivist. A Ph.D. candidate at the University of Minnesota in the Department of Design, Housing, and Apparel, she received a B.F.A. in Graphic Design from the University of Illinois at Urbana-Champaign in 1976.

Pat worked as a free-lance graphic designer for museums and television before coming to the university for graduate study. She is also a fiber artist and has exhibited her work in the United States and Canada.

Pat was the Adelle and Erwin Tomash Fellow in 1994-95, made extensive use of the CBI archives in her dissertation research, and recently presented a paper at the First Tomash Conference on "The Role of Analogy in Popular Descriptions of Early Electronic Computers."

In addition to her primary responsibilities of maintaining and developing the CBI archives and assisting researchers, Pat will be preparing the archives for the move in November 1999 to the new site.

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Moving?

Don't forget to send your change of address to CBI, 103 Walter Library, University of Minnesota, Minneapolis, MN 55455

Tomash

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and Larry Owens' discussion, "The Mathematics of Death and Destruction" explored possible approaches to a study of a Princeton University wound ballistics research initiative that began at the end of World War II.

Martin Campbell-Kelly spoke on "An Approach to the History of Mathematical Tables," and Atsushi Akera explored how Forrester constructed his rhetorical appeal for Whirlwind to the Office of Naval Research and MIT.

Both Fellows and other attendees said that the meeting was both worthwhile and stimulating, and plans are being made to convene a second conference in 1999.

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New Directions

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and principles behind the Manchester rebuild project: "a solid piece of virtual reality."

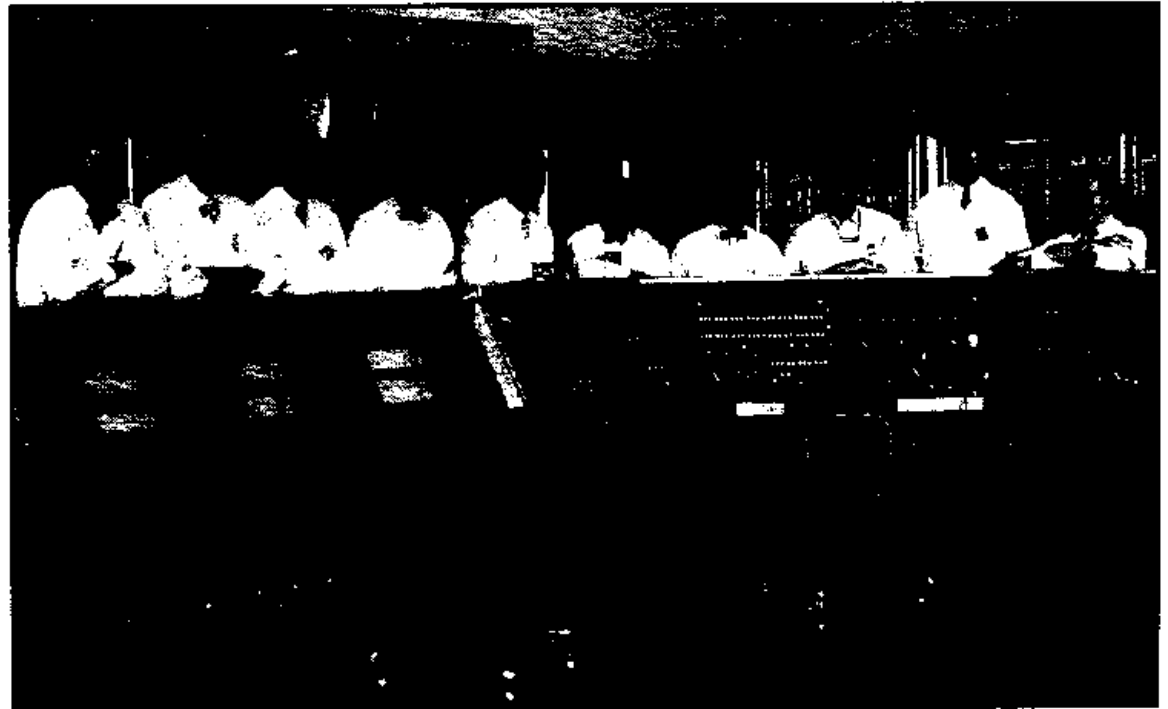
Ross Hamilton analyzed the video games industry. Jack Copeland reviewed the origin of the Turing connectionist network, which could also function as a Universal Turing Machine. Turing wrote: "in working on the ACE I am more interested in producing models of the brain than the present applications of computing."

Big science applications were the interest of Robert Seidel. In atomic weapon calculations and personal research at Los Alamos, computers compensated for the shortage of theoretical physicists.

The final presentation, by the organizer of the event, Jon Agar, looked outward—not technical development but use in X-ray crystallography as a tool of visualization.

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Atlas lifts "off" the World



40 Years Ago...

The Burroughs ground guidance computer successfully guides the first Atlas ICBM launch. Pictured here are the control-room operators posing with the Atlas ground guidance computer. This photo was taken December 5, 1958. It will be part of the new digitized Burroughs Image Collection, soon to be available on the Web.

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