

CHARLES BABBAGE INSTITUTE

CENTER FOR THE HISTORY OF INFORMATION TECHNOLOGY

NEWSLETTER

Vol. 29 No. 2

Fall 2007

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CBI Newsletter Editor: Jeffrey R. Yost

**Charles Babbage Institute
211 Andersen Library
University of Minnesota
222 21st Avenue South
Minneapolis, Minnesota 55455**

**Email: cbi@umn.edu
Ph. (612) 624-5050
Fax: (612) 625-8054
www.cbi.umn.edu**

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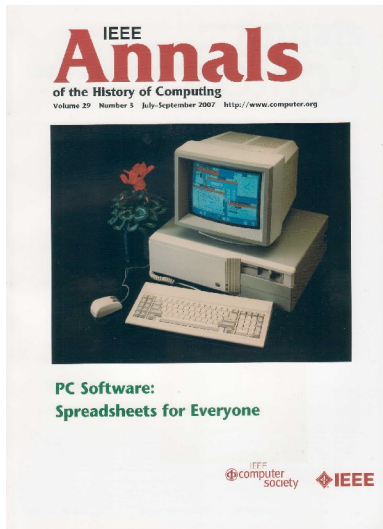
CBI's Yost Named as Editor-in-Chief for *IEEE Annals of the History of Computing*

We are delighted to announce that Jeffrey Yost, Associate Director of the Charles Babbage Institute, has been named incoming Editor-in-Chief of *IEEE Annals of the History of Computing*, the pre-eminent journal in the field. Jeff brings a wealth of experience as scholar, author, and editor to this exciting undertaking. He will lead a team of international scholars in running all aspects of the journal, from planning future special issues to overseeing the journal's active departments—and everything in between.



Since coming to CBI in 1998, after completing his Ph.D. at Case Western Reserve University, Yost has established himself as an authority in the computing history field. He has published two books in the field, including *The Computer Industry* (Greenwood Press, 2005), and he recently co-authored with Arthur Norberg a study of innovation at IBM's Rochester facility (available as a PDF document on CBI's website <www.cbi.umn.edu/hostedpublications/pdf/IBMRochesterHistory.pdf>). His publications include two-dozen articles, chapters, and reviews. He also served as project director for CBI's NSF-funded project "Building a Future for Software History" (1999-2004). In 2004 he joined the *Annals* Editorial Board, and since then has taken on increasingly significant responsibilities with its peer-reviewed editorial processes. Yost's knowledge of the literature in the computing history field is unsurpassed. Dropping by his office with an innocent question about sources on a particular topic is always a thorough education, as numerous researchers and other CBI visitors can readily attest.

CBI and *Annals of the History of Computing* share a storied history, stretching back at least to 1979, when each was founded and then for a time received support from AFIPS, the American Federation of Information Processing Societies. It is no accident that the annual volume numbers of the *CBI Newsletter* and those of *Annals* are synchronized. In 1992, the IEEE Computer Society assumed publication of *Annals* with J.A.N. Lee as Editor-in-Chief, or EIC. Fittingly enough, official recognition of Jeff's editorship arrived with a personal visit from another former EIC of *Annals*—none other than Michael Williams, the IEEE Computer Society's current president. Indeed, in taking up the reins from David Alan Grier, Jeff joins an illustrious roster of *Annals* editors, beginning of course with founding editor Bernie Galler.



Over the years, CBI staff have played many different roles in helping run *Annals* as authors, reviewers, editors, informal advisors, and photo researchers. Yost will be able to draw on the full complement of CBI's strengths as a research center devoted to the history of computing, including extensive subject and biographical files, an 1100-volume reference library, CBI's collection of research-grade oral histories, and not least, some 150,000 photographs. CBI's own history is recorded in two special issues of *Annals*, one in 2001 [23 no. 4] devoted to the legacy of Erwin and Adelle Tomash in founding CBI as well as a forthcoming issue in 2007 [29 no. 4] resulting from the CBI workshop in June 2006 that marked Arthur Norberg's retirement as long-time CBI director [see CBI Newsletter 28 no. 2]. Although Yost

does not officially take up his post until January 2008, he is already hard at work recruiting articles and fine-tuning the publication machinery. He can be reached at <yostx003@umn.edu> or through the CBI office at 612-624-5050. For more on *Annals*, please see <www.computer.org/annals/>. And remember, by joining or renewing your membership in the CBI Friends program, we will be pleased to mail you, hot off the presses, the coming full year of *Annals*.

Thomas J. Misa

Launch of Arthur Norberg Travel Fund

We have exciting news for researchers needing to use CBI's rich resources in the history of computing. Contributions large and small from CBI's extended family, including Arthur's faculty colleagues at the University of Minnesota as well as a number of CBI Friends, have created the "Arthur Norberg Travel Fund." Not only does the new fund appropriately honor Arthur's many accomplishments as founding director of CBI; it also contributes directly to increasing CBI's impact on research and scholarship in our field.



CBI now joins the many research libraries and special collections that offer modest travel grants to encourage and facilitate research. We have funds in hand to make two annual awards each of \$750, and we hope to do so on an on-going and permanent basis. Even with this rather modest sum, a graduate student might travel to CBI and firm up a dissertation chapter, or an assistant professor might do some in-depth research at CBI and turn a promising paper into a publishable article or book chapter. And as the fund grows, so will our ability to make additional awards—or larger awards that might permit

researchers to make extended research visitations at CBI. An added benefit of such travel grants is that they permit CBI to do publicity that may attract the attention of scholars and researchers working in related fields who may be unaware of CBI's many riches.

We salute the members of our extended family who have contributed to the fund:

William F. Aspray
Charles W. Bachman
Paul Baran
Martin Campbell-Kelly
Judith & John Diffenbaugh
Bruce Gilchrist
Martin A. Goetz
Thomas P. Hughes
John Impagliazzo
George T. Jacobi
Susan D. Jones
Sally Gregory Kohlstedt
Mark A. Largent
Thomas J. Misa
Robert M. Price
Linda C. Smith
Roger H. Stuewer
William Wulf & Anita Jones
Jeffrey R. Yost

We would be pleased, of course, for additional contributions that might increase the size of this fund in the coming years. The beauty of this model is that all sums, large and small, directly assist with the task at hand: extending the reach and impact of CBI's tremendous research resources. You can direct your own contribution to this special fund—which stands alongside but apart from CBI's regular operating accounts—to CBI or to the University of Minnesota Foundation (fund #1749). Checks can be made out to the “Charles Babbage Institute Arthur Norberg Travel Fund.”

Publicity for this new travel grant program will be going out very soon. All needed details for applicants will be publicized through CBI's webpage, a number of listservs, and the comprehensive H-NET network. In addition, I'd be happy to answer any questions that you may have about the fund and its activities. <tmisa@umn.edu>

Thomas J. Misa

Director's Desk

CBI is a busy and exciting place these days, and with this column I will try to keep you up-to-speed with our activities and in-the-know about our plans. You might treat each of these items as a kernel that might grow into a full-length newsletter article. Together these items will give you a sense of the activities we are undertaking and the directions we are moving in.

CBI Staff at Full Strength

We announced in the Spring 2007 newsletter the hiring of CBI Archivist R. Arvid Nelsen, and we are equally thrilled to announce here that Stephanie Horowitz has been hired as Assistant Archivist. Having the presence of two full-time professional archivists, as well as two full-time professional historians, makes CBI entirely distinctive for such a small research institute. Now at full strength, for the first time since I came on board in July 2006, we are preparing to take CBI's activities in archiving and research to the next level. In little more than a half year, Arvid has mastered many tasks—integrating CBI more effectively with the immense resources of the University Libraries as well as conducting outreach with campus, professional, and corporate constituencies and prospective donors. Book aficionados will cheer Arvid's new procedures that keep the book jackets "on" the volumes that join CBI's library; now we are more like a proper special collection. Stephanie, too, in scarce two months, has become an invaluable part of the CBI team. You can see her newly launched blog linked to CBI's webpage <www.cbi.umn.edu>, part of our conscious efforts to engage effectively in publicity about our work and activities. Katie (Baumhover) Charlet is the person behind that pleasant voice answering our phones, but we know her as the woman who keeps our entire front office running smoothly. We also have a talented group of work-study students, each returning from last year, including Sasha Grossman, Jess Huffman, and Kevin Irving. Arthur Norberg has been in the CBI office suite, consulting archival documents and preparing for a set of interviews he has been doing with former ACM presidents. I would also like to recognize the heroic efforts of Carrie Seib and Karen Spilman, who each filled in at various times as interim CBI archivist.

CBI awarded NSF grant for FastLane history

In September, the National Science Foundation (NSF) awarded CBI a one-year grant to begin work on a history of NSF's FastLane. FastLane was a major, award-winning e-government initiative, and is the central computer-based infrastructure that NSF uses in its central mission of grant-making. Since its implementation in 2000, researchers submit all proposals to NSF through FastLane, NSF reviewers and panels use it to evaluate and rank proposals for funding, and successfully funded researchers use it to submit annual progress reports. One component is used to electronically transfer funds to the research institutions. It is the essential blood-and-bones as well as guts-and-sinews of NSF.

In this year, we will be developing an electronic infrastructure of our own, so that we can gather research data not only from the core designers of the system (through our

traditional method of oral histories) but also from the hundreds and even thousands of users of FastLane. These include the legacy users at NSF, for whom FastLane is their daily working environment; the special staff at universities' sponsored projects offices, who assist researchers in submitting FastLane proposals; and the community of researchers themselves. To deal with this immense number of varied users, we are developing a database-and-web model to serve as an interview platform as well as a Wiki-based experiment that respondents may use to add to or correct our evolving historical narrative, in addition to initiating new topics for discussion and research. We believe these new research tools will have broad and deep consequences for the wider field of the contemporary history of science and technology as well as the history of computing.

International Activities in Computer History

Computing was from the start an international activity, and the history of computing has become increasingly international in the last several years. CBI is involved with several international initiatives and activities. In May CBI hosted three Swedish researchers who came to the U.S. to investigate models and methods of documentation in computer history. The Swedish research team subsequently received a large grant and, with an institutional base at Stockholm's Royal Institute of Technology, started an ambitious project with a dozen junior researchers to gather documentation on Swedish computing. I had the great pleasure of giving a day-long workshop in Stockholm for this research group in August, and we are exploring several ways of encouraging collaboration between our efforts. I also gave a keynote address at the second History of Nordic Computing Conference, held in Turku, Finland; you may read more about this latter event in the October-December 2007 issue of *IEEE Annals of the History of Computing*.

Another international initiative is the participation of CBI Associate Director Jeffrey Yost in the "Software for Europe" project, which was chosen this spring to be one of just four projects funded by the European Science Foundation in its "Inventing Europe" research cluster. Jeff will contribute his insights and research on software and services to an international team that is investigating the diverse roles of IBM in Europe as well as the European-led effort behind the programming language ALGOL. In September he gave a talk on his ongoing research on software services at the research group's workshop in Prague and Hejnice, Czech Republic (see related article on the "Software for Europe" meeting in this issue).

And, last but not least, we are extremely pleased that Osamu Uda, a Japanese business historian from Nihon University, will be spending his year-long sabbatical at CBI doing research on U.S. start-up companies in the computer field. We especially look forward to developing relationships with colleagues in Asia and other regions of the world in the years to come.

Relations with Companies and Professions

Over the years, CBI has benefited greatly from partnerships with members of the technical professions as well as people from industry. We hope to continue and expand

these relationships in the years to come. At present, CBI is involved in various ways with the Lockheed-Martin Corporation, Cisco Systems, IBM, and the Internet Society. (Our relationship with IEEE is noted in the following item.)

With support from Cisco Systems, we are digitizing the entire run of the journal *ConneXions—The Interoperability Report* (1987-1996), an important forum where technical issues that made the Internet into a seamless, interoperating network were developed. (Also extending our research materials on the Internet, we are thrilled to have received an important collection of personal papers from Brian Kahin, the widely known “internet czar” during the Clinton-Gore administration.)

In the past year, we have been frequently meeting with an active group of employees and recent retirees of Lockheed-Martin’s local branch in Eagan, Minnesota. They are mindful of being direct descendents in the lineage of the legendary days of Minnesota computing, beginning with Engineering Research Associates. An energetic group of volunteers has been conducting oral histories, collecting documentation, hosting a website, and sorting through some 11,000 boxes that Lockheed-Martin will “remove” from its records-management system in the next several years. We hope to collect materials documenting “high-technology manufacturing” as well as important contributions in computing for the U.S. Navy and in air-traffic control. (See the “links and legacy” at <vipclubmn.org>.)

With IBM we enjoy a number of contacts and activities. Most notably, we are permanently web-hosting a PDF version of Arthur Norberg and Jeffrey Yost’s well-regarded *IBM Rochester: A Half Century of Innovation* <www.cbi.umn.edu/hostedpublications/index.html>. This spring IBM made available to CBI a generous in-kind contribution of two brand-new laptops, which are powering our scanning station and assisting our archival work. And, with details yet to come, we are in discussions with IBM about a possible donation of historical materials.

Finally, and again not least, I have been involved in a consulting project with the Internet Society which is based in Reston, Virginia, and Geneva, Switzerland. It hopes to develop a significant activity in the history of the Internet, and has been exploring various means for doing so.

CBI and IEEE Annals of the History of Computing

CBI Friends and other subscribers to *IEEE Annals of the History of Computing* have a treat soon in store. As we noted in the Fall 2006 newsletter, we had a festive celebration of Arthur Norberg’s retirement as CBI director in June 2006. Several papers delivered at that event are now forthcoming in the October-December issue of *Annals*. This special issue, on new directions in the history of computing, features articles by William Aspray, Martin Campbell-Kelly, James Cortada, and myself. It will also be notable as the last issue appearing under David Alan Grier’s editorship. As we announce elsewhere in this issue, Jeffrey Yost is the incoming Editor-in-Chief of *Annals*.

Thomas J. Misa

Exploring the Archives

Resources on Computer Users and User Communities

The following article is the second in a series highlighting materials in the CBI collections. The topics in this series have been chosen both for their historical significance as well as to call attention to materials/collections that may not be known to the research community.

Much like other areas of the history of technology, the history of computing has evolved beyond strictly internalist studies of machines to include many contextual analyses. In 1984 two influential studies were published that examined computer use and culture, David Bolter's *Turing's Man* and Sherry Turkle's *The Second Self*. The former was a philosophical reflection that turned a principal question of artificial intelligence upside down. Rather than evaluating the computer's ability to replicate human thought, Bolter postulated that humans have begun to think more like computers. Meanwhile, Turkle drew on ethnography and observation to theorize about how computers are intimately tied to our social and psychological make-up, to how we think and think about ourselves. This was followed up in 1995 with her book *Life on the Screen*, which extended her theme to the network age. Neither author is a historian by training and neither study relied on archival resources. In Turkle's work, observation and interviews of users provided much of the source material for what was ultimately as much contemporary analysis as history.

A decade later this began to change as historians started to use and proactively create archival material (oral histories) to study computer users. Historian Janet Abbate provided an historical examination of network users in her book *Inventing the Internet* (1999). This insightful study drew on oral histories conducted by the Charles Babbage Institute and funded by DARPA, oral histories Abbate conducted, and other historical documentation. She detailed how early ARPANET and Internet users redefined the network to make email a primary application, despite the fact that this was not an initial goal of DARPA. In the past half-dozen years a small group of historians and other scholars have also done important historical analyses on computer users. These works include: James Cortada's monumental trilogy, *The Digital Hand* (2004, 2006, and 2008), which insightfully surveys the use of computers within more than 40 private and public sector industries; JoAnne Yate's *Structuring the Information Age* (2005), a rich and perceptive analysis of computing in the life insurance industry; and substantive articles by Atsushi Akera, Thomas Haigh, Nathan Ensmenger, and Elisabeth van Meer. Despite this high quality work, all of which utilized resources at the Charles Babbage Institute, the study of computer users and user communities is still in its infancy.

While the Charles Babbage Institute's two largest and most visible collections—the corporate records of Burroughs Corporation and Control Data Corporation—might suggest that our materials focus heavily on producers, these collections, and a number of

our other 200-plus collections, have meaningful and underutilized resources to study computer users and user communities. Below, I will focus on three categories of such materials: software users groups, other data processing user organizations, and educational users.

Software User Groups

In the early mainframe digital computer era of the 1950s and 1960s hardware manufacturers provided only minimal software. Some provided operating systems, but few included extensive applications software. Many of the first corporations and organizations to purchase or lease expensive mainframe systems were in a small cluster of industries. In the first years, a substantial portion came from the aerospace field. These firms had many common programming needs. The hardware producers were in favor of cooperation between these large corporate and institutional customers to reduce pressure on their own firms to provide programming services. This led to company-facilitated software user groups such as IBM Share, initially created for IBM 704 users in 1955. The members of Share traded programming tips and software code for the 704 and many subsequent systems.

CBI has the organizational records of IBM Share. The records include more than 18 cubic feet of correspondence, technical reports, manuals, meeting agendas, proceedings, and publications. This material spans the founding of the organization in 1955 through the early 1990s. Atsushi Akera drew on this collection to develop an important article on IBM Share and programmer identity and professionalization (*Technology and Culture* 42:4, 2001). The rich collection could also be used to advantage for research on many other aspects of the early use of the IBM 704 and a host of subsequent IBM systems. Most of the early Share members were working on engineering and scientific applications. The collection provides a rich resource to understanding how users came together to effectively apply computing technology to many scientific and engineering problems. The material also offers strong possibilities for understanding the institutional evolution of technical user organizations.

In addition to the IBM Share records, CBI also has a number of other collections on computer user organizations. This includes IBM's other sizable user organization, GUIDE. GUIDE, which stands for Guidance of Users of Integrated Data-Processing Equipment, began in 1956 as an international organization of large-scale IBM computer users. In 1970 the user group was incorporated as a non-profit organization under the name of GUIDE International Corporation. CBI's GUIDE International collection includes organizational reports, conference proceedings, installation surveys, and quarterly and annual reports dating from the 1970s to the early 1990s.

While IBM dominated the computer industry, it had seven primary competitors in the 1960s. CBI has smaller collections of materials from some of these competitors' user groups. This includes some records on the Univac Scientific Exchange, or USE, the user group of Sperry Rand's Univac computer division. The USE records date from the founding of the organization in 1955, and include meeting minutes, proceedings, technical papers, newsletters, and conference notes.

Additionally, CBI has records of user groups for firms that overshadowed IBM in new niches of the industry, supercomputers and minicomputers. CBI has records on COOP, the user group for the Control Data 1604. This machine helped build the firm's base of scientific customers as it developed the first machine referred to as a supercomputer, the CDC 6600. On the other side of the industry, smaller scale, lower cost machines became the focus of the Digital Equipment Corporation. CBI has records on DECUS, the Digital Equipment Corporation User Society. These records provide insights into computer use for industrial and laboratory process control, time-sharing, and other applications.

Collectively the records of these five major user groups provide a rich set of resources on computer use from the mid-1950s through the 1970s and beyond—particularly within early adopter industries such as aerospace, insurance, and banking.

Other User Organizations

In addition to the traditional software user groups, which were affiliated with and often supported by individual computer manufacturers, there were also professional organizations for those working in the computing field. One very significant organization was the Data Processing Management Association, or DPMA. The DPMA began in 1949 as the National Machine Accountants Association (NMAA). In 1959 it changed its name to the Data Processing Management Association to recognize and promote its broadening scope in electronic data processing.

The DPMA was committed to promoting increased education and professionalism in information processing activities and management, and became one of the largest information processing management professional associations in the world. The DPMA produced numerous publications and extended educational offerings to the association's members and the information processing community.

CBI's DPMA collection documents the organization's administration and the services it provided to its members. The actions of governing boards and committees are especially well documented. While the collection spans from the founding of the NMAA in 1952 into the early 1990s, it is particularly strong at documenting the pivotal years from the late 1950s through the 1960s, when firms and other organization were reorganizing and changing their data processing departments to incorporate computing systems. While a few historians have meaningfully drawn on CBI's DPMA collection in their research (Thomas Haigh and Nathan Ensmenger), overall this rich collection remains underutilized.

Educational Users

The final broad area I will discuss is educational users. PLATO, which was launched as a project at the University of Illinois at the end of the 1950s, was the first major educational-based computing initiative to develop course software, or courseware, for K through 12 and higher educational users. A young electrical engineer of the University's Control Systems Laboratory created the first PLATO program. It allowed students to

leapfrog through material in the curriculum based on their ability. Initially it ran on an ILLIAC computer and served but one student. The system went through many iterations in the 1960s as more and more subjects were added—including algebra, psychology, languages, and the life sciences. By the mid-1960s a system of terminals networked to a mainframe could accommodate roughly two-dozen students. In 1970 there were more than 700 courses at a range of different K through 12 levels. With PLATO IV in 1972 it was serving 146 locations—some on campus at Illinois, many others at elementary, junior high, and high schools.

Supercomputer giant Control Data Corporation had provided computer hardware for the PLATO effort at Illinois from the early to mid-1960s. Control Data CEO William Norris took particular interest in the system. In the early 1970s CDC programmed PLATO courseware in its new education department. CDC became more and more involved and in 1976 acquired all rights to PLATO from the University of Illinois. The firm invested heavily in PLATO in succeeding years and was a leading force in computer-based education in the late 1970s and early 1980s. Norris saw PLATO not only as an exciting product and service area for the future, but also as a tool for CDC corporate education.

CBI has the University of Illinois, Computer-based Education Research Laboratory PLATO Reports, PLATO Documents and CERL Progress Reports from 1958-1993. This collection of six cubic feet duplicates a collection at the University of Illinois. CBI, however, also has an abundance of unique material on PLATO within the Control Data Corporation Records, and the personal papers of William C. Norris. The documentation provides a rich perspective into how PLATO evolved under CDC's leadership as well as some material on PLATO users.

Beyond and adding to these three areas of users—hardware-specific software user groups, other user organizations, and educational users—is the Charles Babbage Institute's National Bureau of Standards Computer Literature collection. The NBS sought to collect every report available on computing, software, and networking technology from the early post-World War II era through the late 1970s. CBI has all of the NBS-collected reports after 1956, and the bulk of this 240 cubic foot collection contains documents from the early 1960s through the late 1970s. This collection includes many reports and documents on computer use and users.

To conclude, a quick look at the range of CBI's more than 200 collections and 6,000 cubic feet of records might suggest that the collections concentrate almost exclusively on the design, development and production of computers. In addition to these strengths, the Institute also has an abundance of excellent resources on computer users. Looking forward, CBI is committed to aggressively collecting materials on not only the design, development, and manufacturing of computers and software, but also the widespread and varied uses of these technologies.

Jeffrey R. Yost

News from the Archives

New Assistant Archivist Hired

We are delighted to welcome Stephanie Horowitz as the new CBI Assistant Archivist. Stephanie comes to the University of Minnesota from the library school program at the University of North Carolina-Chapel Hill. Stephanie began at CBI on September 4th and brings with her a great deal of experience with collection processing and Encoded Archival Description (EAD), the process by which we are able to publish searchable finding aids online. Stephanie's previous academic background includes a BA in History from the University of Maryland-College Park and an MA in Public History from North Carolina State University. With Stephanie's hire, the CBI Archives staff is now complete for the first time in more than a year and we look forward to the opportunities having a full staff will afford.



CBI Participates in Exhibit at the Minnesota State Fair

At the 2007 Minnesota State Fair, all divisions of the University of Minnesota's Archives and Special Collections collaborated to create an exhibit looking forward to the 150-year anniversary of the state of Minnesota, which will take place in 2008. *Becoming Minnesota: A Sesquicentennial Sampler from the U of M Libraries Archives and Special Collections* showcased selected materials from each library and archive that illustrated significant people, events, and industry in Minnesota history. Contributions from CBI included photographs of William Norris, Seymour Cray, a Control Data Corporation exhibit at the 1969 State Fair, and advertisements featuring products and programs from Engineering Research Associates (ERA)/Remington Rand and Control Data.

Collections Update

In the past several months CBI has received a number of important collections of both archival and print materials. Of special note is James Cortada's research materials that went into the writing of his significant 3-volume work *The Digital Hand*, as well as a large collection of his published works and materials from his years with IBM. CBI received a new accession of materials to be added to the existing Charles Bachman collection documenting Mr. Bachman's significant contributions to database development. A new collection documenting the early development of the Internet was donated by Brian Kahin, author and Senior Fellow at the Computer & Communications Industry Association in Washington, DC. In addition to collections of personal papers, CBI has also added a number of volumes to our print holdings including a collection of books and journals pertaining to database design from University of Minnesota Professor

Emeritus Gordon Everest, a collection of books and journals documenting word processing and office automation from Walter Kleinschrod, and a collection of books on Macintosh products from Thomas Becker. The collections of published books and journals have been described in finding aids which are currently being encoded in EAD and will soon be made available on the CBI website.

New CBI News and Information Blog

We are excited to announce the creation of a new CBI News and Information Blog. The blog contains up-to-date information about events, services, collections, and related information that we think would be useful or interesting to our current and potential users. We have also implemented a “chat” feature, titled “IM an Archivist,” which allows people viewing the blog to receive immediate answers to their questions. The blog is located at <blog.lib.umn.edu/horow021/cbi>, and there is also a link to the blog on CBI’s home page. We encourage you to visit and leave us comments or send us a chat message.

R. Arvid Nelsen

SOFT-EU Meets in the Czech Republic

From September 9th to 13th Software for Europe (SOFT-EU) kicked off the three-year project on the history of European software with a workshop held in Prague and Hejnice, Czech Republic. The project is part of the European Science Foundation’s Inventing Europe platform for transnational research on technology’s historic role in European integration.

SOFT-EU seeks to explore the role of software in the shaping of post-war Europe through the tensions between two contrasting modes of computer technology appropriation: direct importation of software; and the development of software through university-industry co-entrepreneurship.

SOFT-EU is led by Dr. Gerard Alberts, University of Amsterdam, and the Co-Principal Investigators are Dr. Helena Durnova, Brno University of Technology; and Professor Hannu Salmi, University of Turku. Associated investigators on the project include: Dr. Paul Erker, Deutsches Museum; Dr. Thomas Haigh, University of Wisconsin, Milwaukee; Dr. Sandra Mols, University of Manchester; Dr. Pierre Mounier-Kuhn, Université Paris – Sorbonne; Dr. Rudolf Seising, Medical University of Vienna; Dr. James Sumner, University of Manchester; Dr. Aristotle Tympas, National and Kapodistrian University of Athens; and Dr. Jeffrey Yost, Charles Babbage Institute. In addition to the project leader, Co-PIs, and most of the associated investigators, several other scholars participated in the workshop, including historians Martin Campbell-Kelly, University of Warwick, and Adrienne van den Bogaard, Delft University of Technology.



Gerard Alberts (in front) speaking at Soft-EU Workshop, Hejnice, Czech Republic

Dr. Alberts and Dr. Durnova organized the workshop with the aim of exploring the historiographical and methodological opportunities and challenges for the overall project as well as for the presentation of early results of individual investigators. This involved a mixture of research presentations and talks introducing critical literature relevant to the project for discussion. Presentations included Alberts' "Compilers, Operating Systems, and Software," Campbell-Kelly's "The History of the History of Software," van den Bogaard's "Contrasting Views on Software Development within Philips, 1950-1970," and Yost's "Toward a History and Historiography of Computer Services."

Jeffrey R. Yost

History of Computing at the 2007 Summer ISTAS and ICOHTEC Conferences

The summer conferences of both the IEEE International Symposium on Technology and Society (ISTAS) and the International Committee for the History of Technology (ICOHTEC) featured interesting papers, lively discussions, and opportunities to socialize with a diverse group of scholars. Both events included significant presentations on the history of computing and software.

"Risk, Vulnerability, Uncertainty, Technology and Society" was the ISTAS theme, with sessions on risk management, engineering ethics, and government database security. Jeff Voyles (Global Network Consulting) gave an informative luncheon talk on surveillance networks. While the conference was directed toward environmental and societal issues, specific computer-related presentations focused on robotics, modeling techniques, national health records, and video game addiction. Other topics of interest included

nuclear research and testing as well as technology and the environment. Tours of the Atomic Test Museum (Las Vegas, Nevada) and the actual test site 65 miles northwest of the city, as well as a reception and dinner, rounded out the conference activities.

In the area of risk mitigation, Ron Frazzini (University of Minnesota) outlined the historical development of aircraft fault-tolerant computing as a precursor for the automation of automobiles. He described how the methodology used to determine design requirements for the digital systems that provide braking, steering and power controls must account for system faults as well as driver attentiveness. Drivers tend to be less aware when the computer system does more of the actual driving tasks. Historically, aircraft computer systems involved not only parallel computing and the necessary inter-computer communication, but also the development of software that was capable of recognizing faults and providing alternative paths, all requirements for critical automotive computing.

The ICOHTEC conference theme was “Fashioning Technology: Design from Imagination to Practice.” Topics included games and consumer technology, development of military technology, designers and the design methodology of instruments, medical technology, technology in individual national settings, and simulation. Conference tours included the city of Copenhagen, the Carlsberg Brewery, the Technical University of Denmark and local museums, as well as a lively evening of jazz and dancing provided by several of the conference attendees.

Presentations focusing on computing included Anker Helms Jorgensen (IT University of Copenhagen) on the development of computer games, and Timo Leimbach (Deutsches Museum) on the “art” and engineering of software development in the 1960s and 1970s. Martha Ortega (Sociedad Mexicana de Historia de la Ciencia y la Tecnología) described software development in the 1980s in Mexico, and Joan Rothschild (CUNY Graduate Center) discussed uses of computer-aided design.

Ron Frazzini outlined the development of Olivetti’s mechanical calculators in a session on instrument design. Olivetti’s management and innovation techniques correlated with the newly evolving, interactive management styles advocated by pioneering management consultant Mary Parker Follett and others. Built around an integrated team of design and production engineers, artisans and marketing experts, the production process used efficiency studies similar to those of Frederick Taylor. Even though the calculator innovations originating from this integrated design group generally followed existing designs and patents, the engineers added user friendliness and improved calculator functionality.

Both summer conferences presented opportunities for interaction with a group of diverse scholars in complementary fields of interest, and promoted the awareness of new and interesting research.

Ronald Frazzini

SHOT's Fiftieth-Anniversary Conference

The Society for the History of Technology (SHOT) met in Washington D.C. at the Capital Hilton on October 18-22, 2007. This annual meeting began 50th anniversary celebrations, and reflections on the organization's history and future, that will continue and conclude at next year's meeting in Lisbon.

On October 18th an associated pre-conference NSF-sponsored workshop was held at George Mason University's Arlington Campus to evaluate the field and identify and encourage new directions of study. CBI Director Thomas Misa spoke as part of a session entitled "Technology and the Public(s)." Other sessions of the workshop included explorations of technology and power, the dynamics of technical revolutions, technology and the environment, race and gender, and *Technology and Culture* (SHOT's journal).

The conference began the evening of the 18th with a plenary session entitled "Looking Back, Looking Beyond," held in the auditorium of the Carnegie Institution of Washington. This was followed the next morning with the start of regular sessions, 61 in all. It marked the largest SHOT program ever assembled and included eight full sessions focused on the history of computing. This represented roughly double the sessions/presentations in this area compared to SHOT conferences in recent years and reflects the vitality of the field.

Among the history of computing sessions were those on engineering, analysis, and modeling of systems; computing historiography; the politics of computing; texts and context of computer science; computer use; and open source innovation. There were also individual presentations on computer history in a small number of sessions focusing on a range of technologies and themes, including a talk by CBI Associate Director Jeffery Yost on the historiography of computer users and the many resources for the study of the history of users and user communities within CBI's archival holdings.

On Saturday, October 20th, the annual Computers, Information, and Society Special Interest Group luncheon was held. This lively meeting had roughly 50 attendees. The chair of this group, Thomas Haigh, University of Wisconsin-Milwaukee, began the meeting with a broad report on the activities of the group. This was followed by Virginia Tech's Brent Jesiek discussing the new website tools, and the site's functionality for sharing information on projects and research interests. The session also included brief announcements by Indiana University's William Aspray on the Information Technology History Society, as well as by Yost on the upcoming CBI History of Gender and Computing Conference to be held on May 30-31, 2008 <www.tc.umn.edu/~tmisa/gender/> and a short statement encouraging manuscript submissions and subscriptions to *IEEE Annals of the History of Computing*.

On Sunday, October 21, the newly named IT History Society (formerly the Charles Babbage Foundation) held morning and afternoon sessions to introduce the organization's mission, goals, and planned activities to computer history-related organizations and scholars of computer history. These sessions were led by IT History Society Chair Jeffery Stein and the society's chief consultant and History Advisory

Committee Chair William Aspray. More information on the IT History Society is available at the organization's website, <www.ithistory.org>.

Jeffrey R. Yost

Recent Publications

Aloisio, Mario. "Computing at the Malta Statistics Office, 1947-1970." *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 49-61.

Barnes, Susan B. "Alan Kay: Transforming the Computer into a Communication Medium." *IEEE Annals of the History of Computing* 29:2 (Apr.-Jun. 2007): 18-30.

Bergin, Thomas J. "A History of the History of Programming Languages." *IEEE Annals of the History of Computing* 50:5 (May 2007): 69-74.

Brenner, Susan W. "History of Computer Crime." In Karl de Leeuw and Jan Bergstra, eds. *The History of Information Security: A Comprehensive Handbook* (Amsterdam: Elsevier, 2007): 705-724.

Campbell-Kelly, Martin. "Number Crunching without Programming: The Evolution of Spreadsheet Usability." *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 6-19.

Care, Charles. "Not Only Digital: A Review of ACM's Early Involvement with Analog Computing Technology." *Communications of the ACM* 50:5 (May 2007): 42-45.

Ceruzzi, Paul, and Burton Grad. "PC Software: Spreadsheets for Everyone." *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 4-5.

Cortada, James W. *The Digital Hand, Volume III: How Computers Changed the Work of American Public Sector Industries* (New York: Oxford University Press, 2008).

DeNardis, Laura. "A History of Internet Security." In Karl de Leeuw and Jan Bergstra, eds. *The History of Information Security: A Comprehensive Handbook* (Amsterdam: Elsevier, 2007): 681-704.

Diffie, Whitfield, and Susan Landau. "The Export of Cryptography in the 20th and 21st Centuries." In Karl de Leeuw and Jan Bergstra, eds. *The History of Information Security: A Comprehensive Handbook* (Amsterdam: Elsevier, 2007): 725-736.

Ensmenger, Nathan. "Computers as Ethical Artifacts." (Think Piece) *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 86-88.

- Gillmor, C. Stewart. "Stanford, the IBM 650, and the First Trials of Computer Date Matching." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 74-80.
- Grad, Burton. "The Creation and the Demise of VisiCalc." *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 20-31.
- Gray, George T. and Ronald Q. Smith. "Against the Current: The Sperry-Burroughs Merger and the Unisys Struggle to Survive 1980-2001." *IEEE Annals of the History of Computing* 29:2 (Apr.-Jun. 2007): 3-17.
- Gupta, Gopal K. "Computer Science Curriculum Developments in the 1960s." *IEEE Annals of the History of Computing* 29:2 (Apr.-Jun. 2007): 40-54.
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- Higgins, Vaughan. "Performing Users: The Case of a Computer-Based Dairy Decisions-Support System." *Science, Technology & Human Values* 32 (2007): 263-286.
- Jacobs, F. Robert. "Enterprise Resource Planning (ERP)—A Brief History." *Journal of Operations Management* 25:2 (March 2007): 357-363.
- Jiuchun, Zhang and Zhang Baichun. "Founding of the Chinese Academy of Sciences' Institute of Computing Technology." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 16-33.
- Kapor, Mitch. "Recollections on Lotus 1-2-3: Benchmark for Spreadsheet Software." *IEEE Annals of the History of Computing* 29:3 (Jul.-Sept. 2007): 32-40.
- Koss, Adele Mildred. "CDC, Raytheon, and Harvard University: Three Early Data Management Systems." *IEEE Annals of the History of Computing* 29:2 (Apr.-Jun. 2007): 55-65.
- Krueger, Tara. "Mapping Cyberspace: The Image of the Internet." (Think Piece) *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 100-101.
- Minker, Jack. "Forming a Computer Science Center at the University of Maryland." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 49-64.
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- Parker, Donn B. "The Dark Side of Computing: SRI International and the Study of Computer Crime." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 3-15.
- Pollock, Neil, Robin Williams, and Luciana D'Adderio. "Global Software and Its Provenance: Generification Work in the Production of Organizational Software Packages." *Social Studies of Science* 37 (2007): 254-280.

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Smillie, Keith. "Early Computing at the University of Alberta and the Introduction of the LGP-30." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 65-73.

Stachniak, Zbigniew. "Intel SIM8-01: A Proto-PC." *IEEE Annals of the History of Computing* 29:1 (Jan.-Mar. 2007): 34-48.

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Compiled by Jeffrey R. Yost

Featured Photograph

Macromodularization



This 1959 photograph from the Burroughs Collection (<http://www.cbi.umn.edu/images/index.html>) is titled "Macromodularization." This photograph was selected this summer by IEEE Annals of the History of Computing to be the image associated with their "Computing Lives" podcast, which offers readings of selected articles from the journal. You can subscribe to "Computing Lives" at http://www.computer.org/portal/site/ieeecs/menuitem.c5efb9b8ade9096b8a9ca0108bcd45f3/index.jsp?&pName=ieeecs_level1&path=ieeecs/podcasts/computing_lives&file=index.xml&xsl=generic.xsl&