Johnson is New Associate Director

After a year-long search, Stephen Johnson, a historian of science and technology, was named the new Associate Director of CBI.

He is in the fourth and final year of his doctoral program in the history of science and technology at the University of Minnesota. His dissertation, "The Origins, Development, and Diffusion of Systems Technologies in the American and European Space Programs," focuses on systems management in the U.S. Air Force, its further development in NASA, and its diffusion to the integrated European space programs.

Stephen comes to CBI with twelve years' experience in computing, research, and management in the aerospace industry.

After he received his Bachelor's degree from Whitman College in Physics, while he worked at the Naval Undersea Warfare Engineering Station in Keyport, Washington, Stephen then worked for Northrop Corporation in Southern California, and Martin Marietta in Denver, Colorado. He managed a simulation laboratory, worked on the design, test, and operations of the Magellan spacecraft probe to Venus, and was subsequently the principal investigator for a research program in dependable system technology.

While working on his doctorate, he was also a research associate for the University of Cincinnati's Space Engineering Research Center, and the co-owner and co-founder of Dependable Systems International.

Stephen began graduate studies in history at the University of Colorado, Denver, in 1987, and came to the University of Minnesota in the fall of 1992. His advisor is Dr. Arthur Norberg, former director of CBI.

At CBI, Stephen will be investigating the development of R&D management in the computer industry, particularly in its dependence upon military "systems management."

He will also investigate the historical development of computer fault tolerance and reliability.

Stephen's wife, Diane, is a manager at AT&T in Minneapolis. He has two children, Casey, 12, and Travis, 8. He is also a songwriter and poet.

Although his parents originally hailed from central Minnesota, and told him many tales of life in the frigid rural northland, Stephen, who grew up in the desert and mountains of eastern Washington state, is still adjusting to Minnesota's outdoor recreation, centered on water, frozen or otherwise!

Continued on page 2
Recent Publications


Davidson, Clive, “The Man Who Made Computers Personal (Alan Kay),” Continued on page 4

ENIAC . . .

Continued from page 1

sought to place the invention of the ENIAC in historical perspective. Babbage Fellow Paul Ceruzzi discussed “The ENIAC and the Myth of the ‘Computer Revolution’. ’ Paul compared the revolution produced by ENIAC with a number of other transitions in the history of computing, and concluded that it was more meaningful to regard the field as in continuous revolution. ENIAC pushed the ‘calculating’ function of computing machines way ahead of all the others, stimulating innovation in data storage, output and other functions, including the stored program.

Mike Williams, editor of the IEEE Annals of the History of Computing, described the ENIAC architecture, illustrating his description with props from the original machine and a newsreel film of the ENIAC in action.

Mitch Marcus, head of the Computer Science Division of the University of Pennsylvania, outlined the conceptual shift from a calculator to a computer.

David Allison’s talk, “Using the Computer: Episodes Across 50 Years,” described three episodes of computer usage from the ENIAC to the present.

Professor Michael Mahoney analyzed “The New Science of Computing,” from its origins before World War II, through the work of Claude Shannon and Norbert Weiner, to the convergence of a wide variety of scientific and technical agendas to produce computer science.

Maurice Wilkes delivered the keynote address of the ACM conference on Friday, February 16. He was introduced by CBF Trustee Tony Oettinger. Wilkes referred to his Turing Lecture of 1967 and concluded that, “There was no stability in the computer world in 1967, and we have no stability now. If another anniversary celebration is held in 25 years, he or she will be able to say then that there is still no sign of the computer...” Continued on page 5
Integrating the Archives at DEC

By Craig G. St. Clair
Corporate Archivist and Manager of Corporate Collection, Digital Equipment Corporation

Archives in modern American corporations are often isolated. They are typically the place of last resort: where you send the plaque or artifact that no one wants but no one wants to throw out or where you go to find that elusive piece of information.

At Digital Equipment Corporation, we've embarked on a program to integrate archival information into other streams of information available to employees.

Digital started its archives three years ago. The archives was designed to document the company's growth and development and to gain intellectual control over the company's vast store of permanent records. From the beginning, the archives collected records about the company's technological advances in interactive computing, innovations in computer networks and the progress in information processing from PDP-1 to VAX to Alpha.

When we began to think about ways to integrate the archives with the rest of the corporation, the company's internal culture and technological orientation -- its system's base, fondness for new technology and preferred method of communicating -- helped to build an integrated archives. All sorts of archival information could be received and delivered via the company's internal computer network.

Our aim was to make information about all aspects of DEC integrated seamlessly with other sources of company and external information, and to make them available at the employee's desktop.

The first step was to fold our small stand-alone archives database into the on-line catalog for the Digital Library Network so that a search on Digital's VAX computers will turn up published materials from the lending library, videotapes from a reference library, and executive memoranda, marketing materials and product documentation from the archives.

Our next step will be to begin to deliver archival information directly to the client via the Internet electronic network. The Electronic Photo Library will enable clients to search for and view images from the photo library at their desktop and order high-resolution digitized images, hard copy negatives, slides and prints, or simply download images directly into presentations or reports.

Digitized images of archival photo-

Continued on page 6

Fellowship Announcement

Postgraduate Fellowships, History of Science & Technology: The Centre de Recherche en Histoire des Sciences et des Techniques in Paris announces two to three postgraduate, 6-month to 1-year positions for the year 1997. Younger scholars performing work in the history of 19th and 20th century science and technology are encouraged to apply. A good command of French is required. Gross monthly salary is usually around FF3,000. Travel to France not included. Deadline for applications is April 30, 1996. Letters of application, accompanied by a complete curriculum vitae, a list of publications, a brief statement of the proposed research (in French) and 2 letters of recommendation should be sent to:

John Krige, directeur
C.R.H.T., Cité des Sciences et de l'Industrie
75930 Paris Cedex 19, France
tel: 1.40.05.75.52
tel: 1.40.05.79.21
Continued from page 2


Frosch, Karl, Synbolverarbeitende Maschinen: Eine Archäologie, (Steyr: Museum Arbeitsebelt, 1993).


Greenberg, Keith Elliot, Steven Jobs and Steve Wozniak: Creating the Apple Computer, (Woodbridge, Conn: Blackbirch Press, 1994).


Kaplan, Jerry, Startup: A Silicon Valley Adventure, (Boston: Houghton Mifflin, 1995).


MacKenzie, Donald, “The Automation of Proof: A Historical and Sociologi-
field ceasing to be one of excitement and innovation.

In the history session that followed Wilkes’ address, Tomash Fellow Atushi Akera spoke on “John Mauchly and the Origins of Modern Computing,” weaving together his formative years, his experience in the Moore School, and his contributions to ENIAC. Penn post-doctoral fellow Pap Ndiaye spoke on Eckert-Mauchly and the Defense Establishment. He argued that computers originated in a scientific and technological environment dominated by military agencies. The Eckert and Mauchly Computer Company (EMCC) sought, in contrast, a commercial computer. EMCC looked to the government for capital to develop their machine, and, failing to win Atomic Energy Commission or Office of Naval Research Support, they signed with the National Bureau of Standards to develop a machine for the Bureau of the Census. The accusations of subversive tendencies and affiliations leveled at NBS director E. U. Condon and at Mauchly led, Ndiaye argued, to the denial of security clearance and contracts to EMCC that might have enabled them to survive. When EMCC was taken over by Remington Rand, Retired General Leslie Groves expelled Mauchly from the company.

Friday’s afternoon sessions dealt with software, and featured talks by Jean Sammet on the chronological development of programming languages, and CBF Trustee Peter Denning on operating systems.

The highlight of Saturday’s history session was a 90-minute address by Alan Kay on “The Development of the Personal Computer.” Kay reviewed the development of the “Mac” workstation, overlapping window interface, Smalltalk, Ethernet, laser printing, and “client-server” computing— including the accomplishments at the Xerox Palo Alto Research Center that have since been incorporated in personal computers. He argued that the Center’s success was based upon its ability to look 20 years ahead and foresee the consequences of Moore’s Law.

The hardware history session featured Wilkes, who discussed systems such as the ENIAC, the EDSAC, and the von Neumann machine that defined the first principles of machine structure, and the evolution of the computer into highly pipelined systems such as IBM’s Stretch, IBM’s Model 91, and CDC’s P6600, which pioneered the processor as we know it today.

Harry Huskey and Henry Tropp spoke on National Bureau of Standards computer development, especially the Standards Western Automatic Computer (SWAC) at the Institute of Numerical Analysis at UCLA.

The final session, “The Army, the National Need and the ENIAC,” featured talks by Herman H. Goldstine and Harry L. Reed, Jr., who reviewed the design and construction of ENIAC and reflected on its influences on numerical methods and the foundations of modern computing.

CBF Director Bob Seidel and Archivist Bruce Brunner participated in the planning for these sessions, which will be followed by a commemoration of the Moore School lectures on May 17 and 18 in Philadelphia, and a variety of other celebrations over the next 17 months. Participants in that session will include Bill Aspray, Janet Abbate, Atushi Akera, and Pierre Mounier-Kuhn. Bob Seidel will chair a session on military funding of computers.
Recent Publications...

Continued from page 4


Continued in the next issue...

The PDP-6 engineering team poses in front of their machine in 1964

Photo Courtesy of Digital Equipment

DEC Archives...

Continued from page 3

...graphs will be integrated in one catalog along with textual material from the archives and published material from the various reference libraries.

Electronic records will be linked to full text record collections so employees can search collections of press releases, executive interviews or company milestones by key word and then download documents via the network.

Using available technology to document technological advances in a company driven by technology makes access to information held by Digital's libraries and Corporate Collections available along with external information such as news wires, journal databases, CD ROM databases and market research reports.

Charles Babbage Institute
NEWSLETTER

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