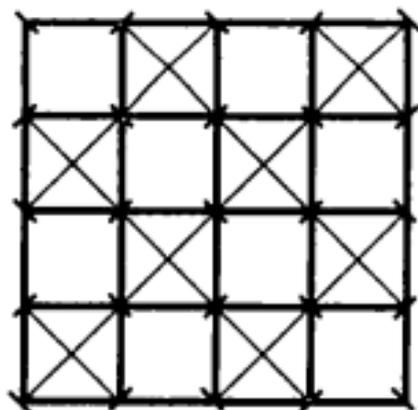


**The  
Computer  
Museum**

300 Congress Street  
Boston, MA 02210  
TEL (617) 426-2800

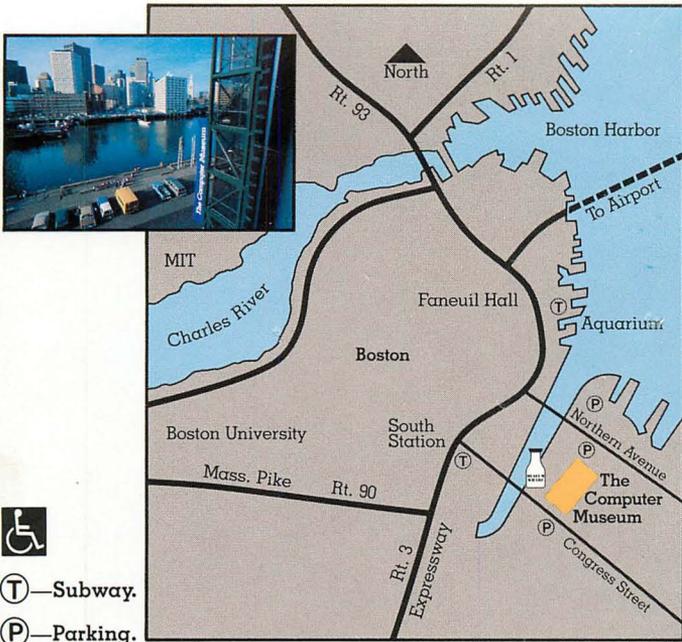
World Wide Web [http //www.tcm.org/](http://www.tcm.org/)

*Computer History Center*  
PO Box 3038  
Stanford, CA 94309-3038



**Carol Welsh**  
Managing Director,  
Computer History Center

TEL (408) 562-7915  
FAX (408) 988-2874  
E-MAIL [welsh@tcm.org](mailto:welsh@tcm.org)



**T**—Subway.

**P**—Parking.



**The Computer Museum**  
**Museum Wharf**  
**300 Congress Street**  
**Boston, MA 02210**

**Telephone:**

Call our Talking Computer for more information: (617) 423-6758.

The Computer Museum Offices: (617) 426-2800.

**Hours:**

*Summer:* Open daily 10–6, Thursday and Friday 10–9. *Winter:* Open Tuesday through Sunday 10–6, Thursday and Friday 10–9. Closed Mondays except holidays and during Boston school vacation weeks. Closed New Year's Day, Thanksgiving and Christmas.

**Admission:**

Adults \$4.00; Students and senior citizens \$3.00; free for museum members and after 6 p.m. on Fridays. Special rates are available by advance reservation for groups of 10 or more. Call (617) 426-2800 to make reservations.

**Programs:**

Join us for a series of informal and informative talks on subjects ranging from computer animation to artificial intelligence. Programs are held Thursday evenings and Sunday afternoons. Call or write for a program calendar.

**The Computer Museum Store:**

Open during regular Museum hours, the store offers a unique selection of books, educational materials and gifts. For a free catalog, write to the store or call (617) 426-2800.

**Join The Computer Museum!**

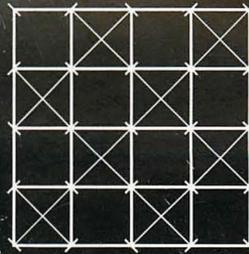
Museum members receive the Museum's quarterly illustrated magazine, unlimited free admission, a 10% discount in The Computer Museum Store, invitations to special events, and more. Corporate, family and individual memberships are available. For more information, call (617) 426-2800.

**Directions:**

Follow signs to Museum Wharf. 

By MBTA: Take Red Line to South Station.

By Car: *From North:* Expressway (Rte. 3) South to High & Congress Sts. exit; third left onto Congress Street and across bridge. *From South:* Expressway (Rte. 3) North to Atlantic & Northern Aves. exit; immediate right over Northern Ave. Bridge. *From West:* Mass. Pike (Rte. 90) to Expressway north (Rte. 3), Atlantic Ave. exit. Right over Northern Ave. bridge.



# The Computer Museum



**Boston**

Printing: R&S Printing

## Now everyone can get into computers . . . at The Computer Museum

Experiment with a roomful of personal computers, where you can "paint" a picture or compose a melody—even program a computer to say your name.

Change the computer image of your own face, design a car, or create a fractal snowflake.



Fire a rocket and change orbit on an Apollo astronaut's guidance computer.

Journey through the history of computing—from the largest vacuum tube computer ever built to today's sophisticated desktop wonders.

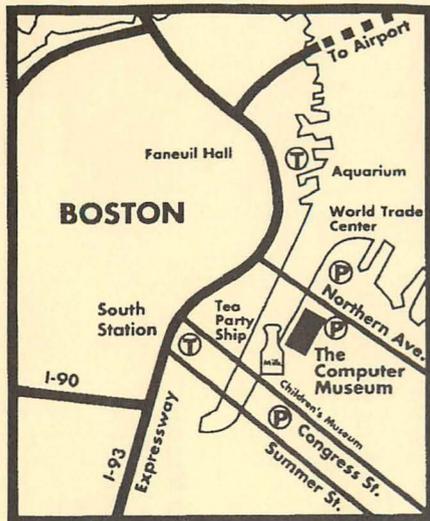
Discover the latest in state-of-the-art computer animated films and videos.

Fly a plane on a computer that simulates flight.



**The Computer Museum.  
There's something in it  
for everyone.**

Photography: Bill Gallery



### Directions

Follow the signs displaying a giant milk bottle, our landmark, to Museum Wharf. Museum Wharf is also home to The Children's Museum, The Boston Tea Party Ship & Museum and several restaurants.

**By Subway:** Take the Red Line to South Station. Walk across the Congress Street Bridge.

**From the North:** Expressway (I-93) south to Exit 23, High & Congress Streets. Make the first left onto Congress Street and stay over to the right. Go through two lights and over the Congress Street Bridge. The Museum is on the left at the foot of the bridge.

**From the South:** Expressway (I-93) north to Downtown, Massachusetts Turnpike/ Chinatown Exit. Bear left to sign marked Downtown Boston. At the end of the ramp, take a right on Kneeland Street to South Station. Make a left onto Atlantic Avenue. Go through two lights and make a right on Congress Street and cross over the bridge. The Museum is on the left at the foot of the bridge.

**From the West:** Massachusetts Turnpike (I-90) east to Downtown Boston, South Station Exit. Go through three lights onto Congress Street and across the Bridge. The Museum is on the left at the foot of the bridge.

*Set aside your expectations of a traditional museum and come discover the world's only museum devoted to people and computers!*

*Once inside you quickly realize The Computer Museum is like nowhere else you've ever been.*

*Our large, colorful galleries are filled with over 125 fun, easy-to-use interactive exhibits that await your touch.*

*Just right for kids aged 4 to 104!*

### Hours

**Winter:** September 7 - June 12: Tuesday through Sunday, 10 a.m. - 5 p.m.

**Summer:** June 13 - September 6: Daily, 10 a.m. - 6 p.m.

Open Monday holidays and Boston school vacations.

Closed on New Year's Day, Thanksgiving and Christmas.

Hours subject to change without notice.

### Food

Food is available at the McDonald's restaurant located in the Museum Wharf building, which is open year-round and has indoor seating. The Hood Milk Bottle, on the Museum Wharf deck, is open from April through October, and serves sandwiches, salads, frozen yogurt and ice cream. Food may be eaten outside on the Museum Wharf benches. Lightships and Victoria Station restaurants are also available for inside seating and complete meals.

### Please Note

We're sorry, but smoking, food, and drinks are not allowed in the exhibit halls.

Physically challenged visitors will find all Museum exhibit areas accessible.

### Admission

Adults, \$7.00; students and senior citizens, \$5.00; children 4 and under, free. Prices subject to change without notice.

Reserved tickets are available and are an excellent gift idea. Call us at (617) 426-2800, x310.

### Volunteer Opportunities

Join The Computer Museum family and donate your time to help us grow! Call us at (617) 426-2800, x344, for more information.

### Party

For an event your guests will remember, hold a state-of-the-art party, wedding, bar/bat mitzvah reception, social gathering, corporate affair or press conference at The Computer Museum! We provide a professional functions staff and assistance for a perfect event from start to finish. Call us at (617) 426-2800, x 340 for details.

### Gift Ideas

Reserved tickets and Museum Memberships are available and make excellent gifts for all ages. Call us at (617) 426-2800, x 310.

For a truly unique selection, stop by the Computer Museum Store on the first floor and pick out the ultimate gift!

### Let's Talk

The Computer Museum wants to hear from you. Tell us your ideas, suggestions and comments. Call us at (617) 426-2800, x 396.

### Groups

The Computer Museum welcomes groups of 10 or more. Call us toll-free and make your reservations at least 2 weeks in advance for best choice of dates, (800) 370-CHIP.

### Parking

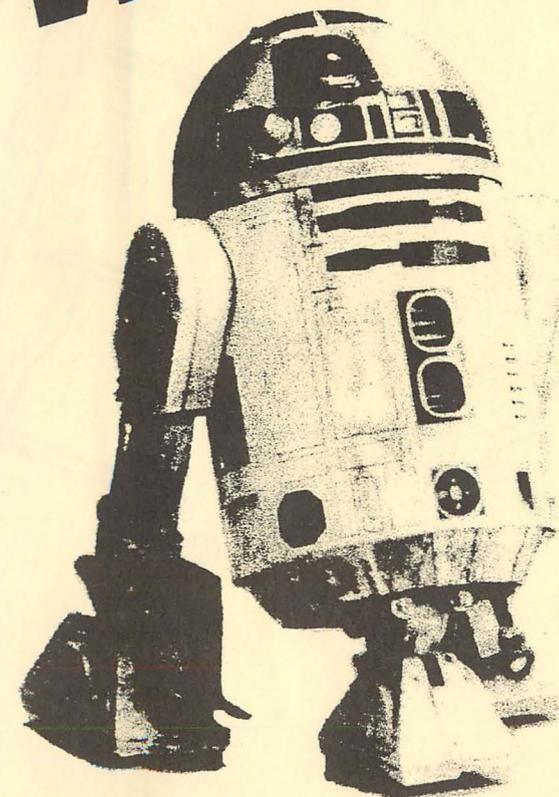
Parking is available on Northern Avenue, just over the bridge. The charge is \$5 per day.



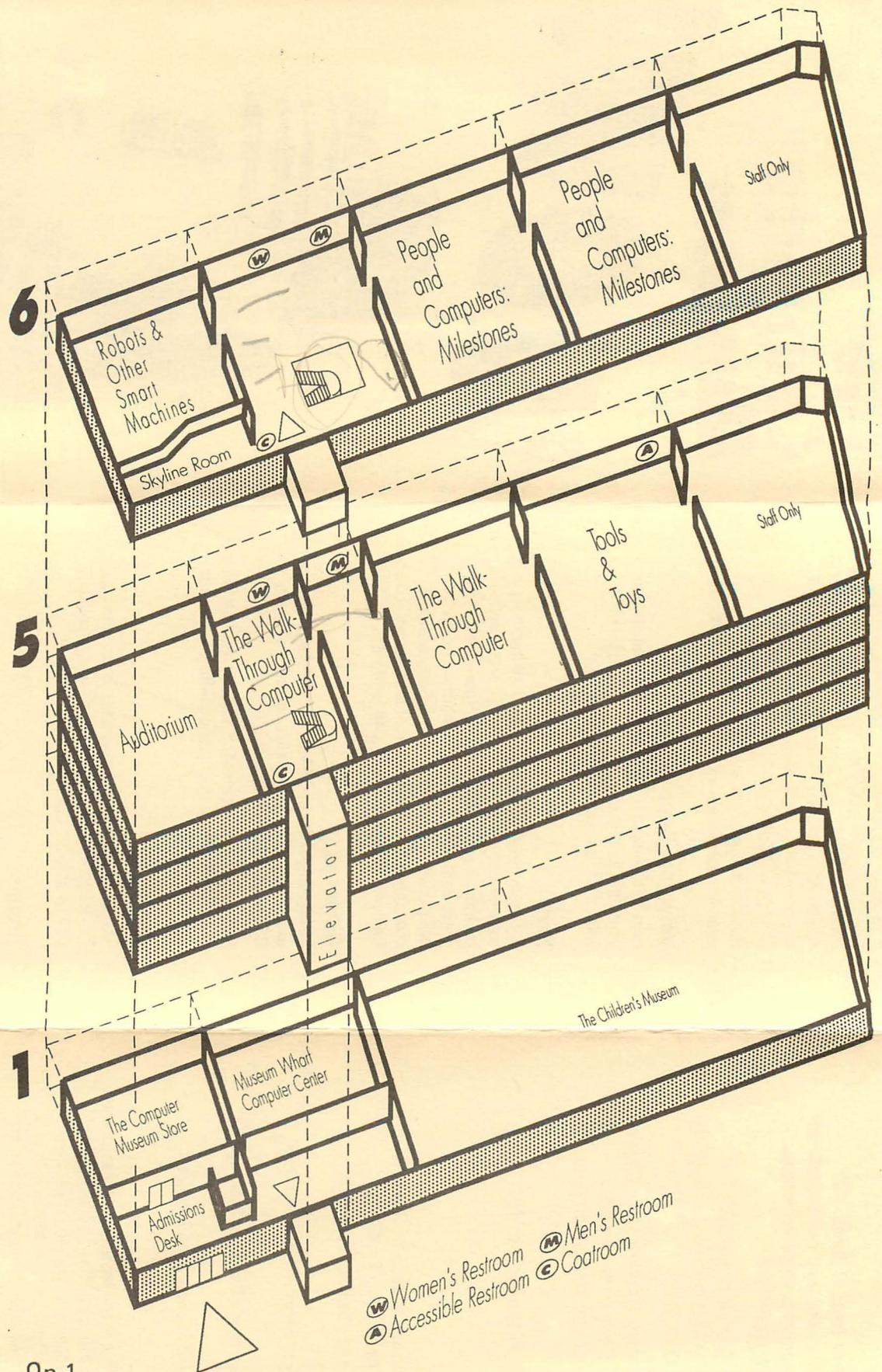
For more information about the Museum and special events, please call our talking robot at (617) 423-6758

# The Computer Museum

# WOW!



See R2-D2™ in our newest exhibit!



**On 6**

**ROBOTS & OTHER SMART MACHINES**

The original "R2-D2"™ from *Star Wars* hosts a world of real robots and "smart" machines that come alive when you use them to do all kinds of creative and entertaining activities.

**PEOPLE AND COMPUTERS: Milestones Of A Revolution**

Travel back in time through interactive exhibits and trace today's personal computers to their giant ancestors. It's a one-of-a-kind trip down "memory" lane! Daily tours at 11:15, 1:15, 3:00 and 4:15.

**On 5**

**THE WALK-THROUGH COMPUTER™**

The Walk-Through Computer is the world's only two-story high "personal" computer. To start it, climb on its mouse and roll the trackball. Use both hands to press down on the keys. Then walk inside and watch it work--lights flash, drives spin and information flows before your eyes. Catch tours daily at 10:45, noon, 2:30 and 3:30.

**TOOLS & TOYS: The Amazing Personal Computer**

Go where you've never been and do what you've never done before--from visiting virtual worlds to "piloting" your own plane! Discover new ways to have fun as you explore all the amazing things you can do with a personal computer.

**On 1**

**The Computer Museum Store**

Pick up a copy of our exclusive video on how computers work, *A Journey Into The Walk-Through Computer*. Also available: educational software, books, toys, high-tech jewelry, t-shirts and more!

**Admissions Desk: Ask us about...**

Museum Membership  
Available at the Admissions Desk, membership to the Museum has the following advantages: free admission, special member events, Museum Store discounts, Newsletter and Annual subscriptions.

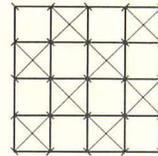
Visit the Desk or call us at (617) 426-2800, x338, for more information.

**Visitor Assistants**

From the moment you walk in, you notice our Visitor Assistants (VAs). They are easily identified by their blue vests with the "Ask Me" symbol on the back. VAs can be a valuable part of your Museum experience. Please ask them if you want more information about anything at the Museum.

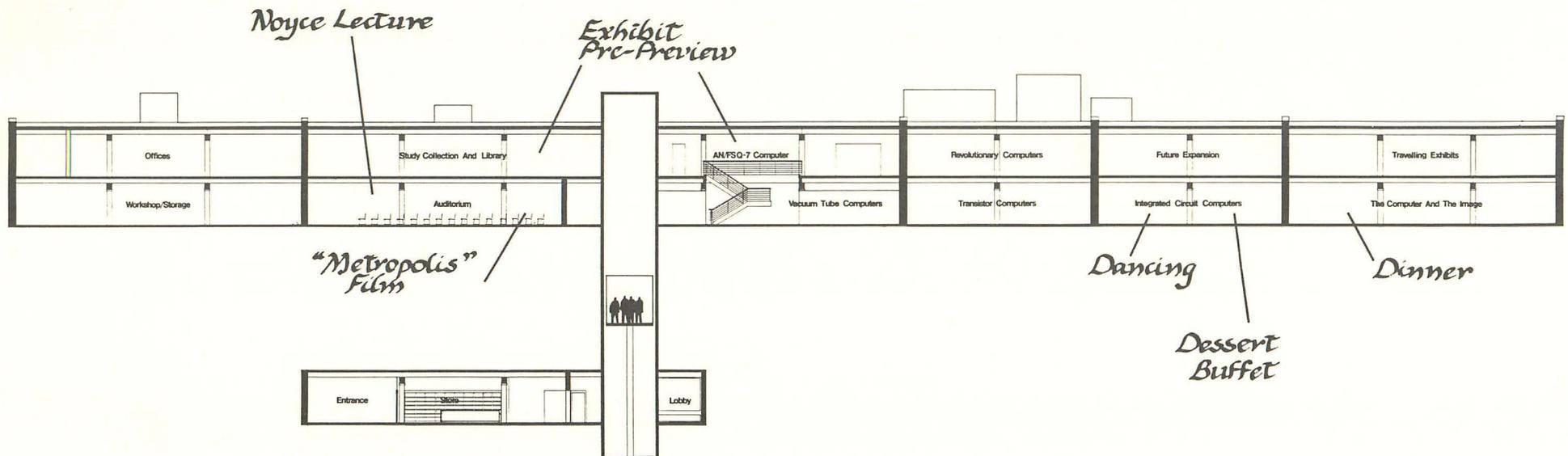


**The Computer Museum**  
300 Congress Street  
Boston, MA 02210  
(617) 426-6758



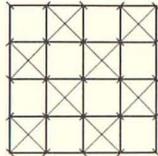
## Pre-Preview Party

- 6:30 p.m. Bob Noyce on the invention of the integrated circuit
- 7:30 Exhibit Pre-Preview
- 8:30 Dinner
- 9:30-12:30 Dancing To the New England Conservatory Honors Jazz Quintet
- 10:00 Fritz Lang's 1926 Film "Metropolis"



The Computer Museum

The Computer Museum  
Pre-Review Party



May 11, 1984

*Donations:*

Betty Brown and  
The Country Garden Club  
of Westford

Carol's Cloths

The Wine Cellar  
of Silene

Flowers: The person at your  
table born closest to  
May 11<sup>th</sup> may take the flowers.

The Computer Museum

# NEWS

## AARON, the Robotic Artist Premieres in Color

It's taken me 20 years to teach AARON how to draw. How can I possibly teach it to color before I die?

—Harold Cohen, 1989

Remarkably, Cohen has—and only six years later—accomplished the task, at the University of California, San Diego, where he directs the Center for Research in Computing and the Arts. “AARON,” an expert system with its own painting machine, built by the celebrated artist, premieres at the Museum on April 1.

Every day until May 29, the computer-driven robot controlled by AARON will create a painting.

Each morning, Cohen will review the drawings composed during the night on a Silicon Graphics workstation, and choose one for the day's work. The file containing the chosen image will then be sent to a 486 computer controlling the painting machine, a flatbed device that moves a small robot arm around a 8-ft. x 6-ft. table and is equipped with an array of different-sized “brushes,” bottles of dye and mixing cups.

The machine will mix the colors from a palette of selected hues that can be diluted to achieve desired luminosities.

Grabbing a cup, AARON places it under a bottle, opens and closes the dye tap, puts the cup in a holder, picks up a brush, dips it in dye, and paints. Over three or four hours, a 25-sq.-ft. colored image will emerge. These paintings mostly depict imagined people—“sometimes looking remarkably like people I know,” said Cohen.

### Dialogue: Cohen and Computer

“Harold explores creativity as no one else has—by programming a computer to create a model of art-making that proves itself by making art,” said Pamela McCorduck, author of *AARON'S CODE: Meta-Art, Artificial Intelligence, and the Work of Harold Cohen*.

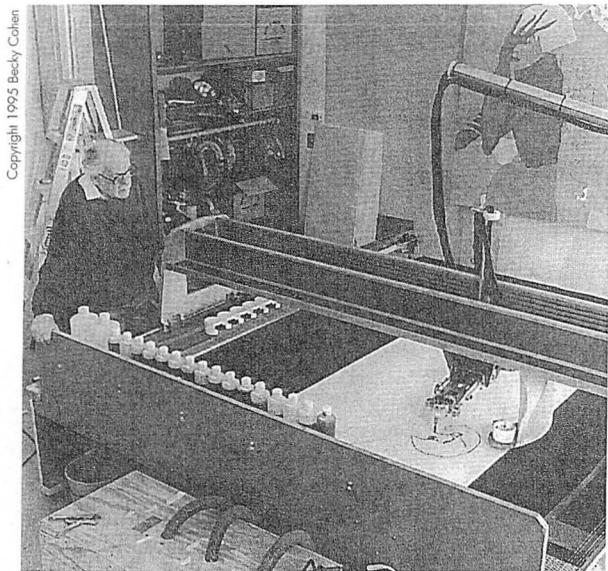
AARON represents “the most intimate, sustained dialogue any single human being has ever had with a computer,” said McCorduck. This dialogue started in 1973, when Professor Ed Feigenbaum invited Cohen to Stanford's AI Lab. He stayed two years, probing the question: What is the minimum condition under which a set of marks acts as an image? His explorations led to the birth of AARON. Embodying ideas from AI and rules derived from Cohen's experience as an artist, AARON has evolved from a few rules generating simple shapes to composing complex figures, requiring detailed knowledge, both of its subject matter and of the methods of visual representation. The program draws autonomously, relying on its own knowledge, on a branching structure of rules and on feedback paths from what it has done to determine how to proceed.

Cohen began writing the program in C, running it first on a DEC PDP-11/45, later on a VAX 750. By 1985, when he moved to a MicroVAX-2, AARON had drawn its first human figure.

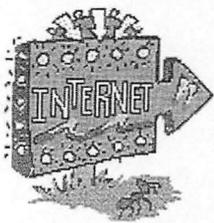
### Challenge of Color

It troubled Cohen that a program smart enough to create original drawings could

(continued on P.2)



In his studio at the University of California, San Diego, Cohen tests his painting machine. On the wall is a portrait drawn by AARON and hand-colored by Cohen.



## NSF Grant Spurs Development of On-Line Museum

I am delighted to announce that the Museum is moving

forward at full speed to integrate computer networks into our education services. A two-year \$419,402 grant from the National Science Foundation will be used both to implement our plans for an electronic presence and to explore new territory.

In Phase One, the Museum will provide on-line access to selected exhibits such as the Internet Sampler, which includes pages on a host of Internet issues such as privacy and access. The historical timelines in both *ROBOTS & Other Smart Machines™* and *The Networked Planet™* will be available. The Museum will post the catalog of the historical collection and a selection of the documents collection. Press releases, news, announcements of events, membership and visitor services and full administrative information about the Museum will also be on-line. Tap in by pointing to: <http://www.net.org/>

The Museum will launch a second experimental phase by convening a distinguished group of advisors drawn from industry and academic institutions. The goal is to determine how networks can effectively extend the Museum's educational mission to the ever-increasing millions of people and institutions with Internet

access. The challenge is to develop compelling interactive experiences that exploit the special nature of networks and the Museum's unique approach to exhibits. This phase will last two years and culminate in the opening of the On-Line Museum.

In the meantime, the Museum's two major fundraisers have become completely intertwined with digital networks. The Computer Bowl® will link teams on each coast together in real time as they wrestle with questions posed in "cyberspace" (see page 3). And the Internet Auction will use brand-new World Wide Web auction software to offer pictures of the items and make participation more exciting with a real-time view of bidding (see page 6).

These events usher in an age of network interactivity beyond video conferencing and picture phones. The Museum's challenge is to develop a new and exciting kind of experience for tomorrow's virtual visitors. Share your ideas with us, on-line or off, as we establish our Internet presence.

Oliver Strimpel  
Executive Director  
strimpel@tcm.org

### Board of Trustees (As of 1/30/95)

Charles A. Zraket (chair)  
*The MITRE Corporation*  
Richard P. Case (vice chair)  
*International Business Machines Corporation*  
Oliver Strimpel  
Executive Director  
*The Computer Museum*  
Gwen Bell  
Founding President  
*The Computer Museum*  
Edward Belove  
*Ziff Desktop Information*  
Lynda Schubert Bodman  
*Schubert Associates*  
Richard M. Burnes, Jr.  
*Charles River Ventures*  
Gary Eichhorn  
*Hewlett-Packard Company*  
J. Thomas Franklin, Esquire (clerk)  
*Lucash, Gesmer, Updegrave*  
Samuel F. Fuller  
*Digital Equipment Corporation*  
Roger A. Heinen, Jr.  
*Microsoft Corporation*  
Gardner C. Hendrie  
*Sigma Partners*  
Charles House  
*Veritas Software*  
David L. House  
*Intel Corporation*  
David B. Kaplan  
*Price Waterhouse*  
James L. McKenney  
*Harvard Business School*  
Laura Barker Morse  
*Heidrick & Struggles*  
David Nelson  
*Novell Multimedia*  
Anthony D. Pell  
*Pell, Rudman & Co., Inc.*  
Nicholas A. Pettinella  
*Intermetrics, Inc.*  
F. Grant Saviers  
*Adaptec, Inc.*  
Edward A. Schwartz  
*New England Legal Foundation*  
Hal B. Shear  
*Research Investment Advisors, Ltd.*  
Michael Simmons  
Richard L. Taylor  
*Blue Cross Blue Shield*  
Dorothy A. Terrell  
*SunExpress*

### AARON (continued from P.1)

not color. But color is staggeringly complex. Since AARON can't see, writing the program is a bit like telling someone over the phone, "use this bright red," when you know he can't visualize exactly the shade and intensity red that you see. Cohen observed, "The central problem is that we don't deal with color symbolically, as we do in thinking about subject matter or composition. In writing the program, however, I can only deal with those aspects of color that can be represented symbolically."

He began by developing a set of strategies for coloring on the screen of his Silicon Graphics workstation, writing in Lisp. But coloring in this domain involves additive mixing, and the next task was to translate these strategies into terms appropriate to the subtractive mixing of the actual dyes he would use with the painting machine. Then, Cohen had to build a robot that could mix and spread colors in a style befitting a fine artist. Problems arose—from finding archival paper that wasn't too heavy for hanging to trying to make the machine quieter.

### Quest

In 1968, when Cohen was in full command of his art with a "reputation as a painter equal to that of any British artist of his generation," according to Michael Compton, Keeper of Modern Painting at London's Tate Gallery, he left that world. "He had all the accolades, but the quest—to express what he knows and sees—took him somewhere else. The quest is the same. He just changed the means of achieving it, choosing the more difficult path," said McCorduck.

A limited Museum Edition of signed Cohen paintings will be available in the Museum's auction on the World Wide Web, starting May 22.

*The Robotic Artist: AARON in Living Color* is being sponsored by Gordon and Gwen Bell, American Airlines, the American Association for Artificial Intelligence, and Silicon Graphics.

### To Reach Us

General Information	(617)423-6758
Group Visits	1-800-370-CHIP
West Coast Office	(415)323-1909
The Computer Bowl	(415)323-1909
Museum Offices	(617)426-2800
Collections	x342
The Computer Clubhouse	x347
Functions	x340
Membership	x432
Museum Store	x306
Public Relations	x341
Volunteer Program	x433
Fax	(617)426-2943

For Museum staff, e-mail: [lastname@tcm.org](mailto:lastname@tcm.org)  
For general Museum information, e-mail: [computer\\_info@tcm.org](mailto:computer_info@tcm.org) with request in subject line and send help instructions as the body of the message.

Via World Wide Web: <http://www.net.org/>

**Summer:** Open daily, 10am-6pm, through Labor Day

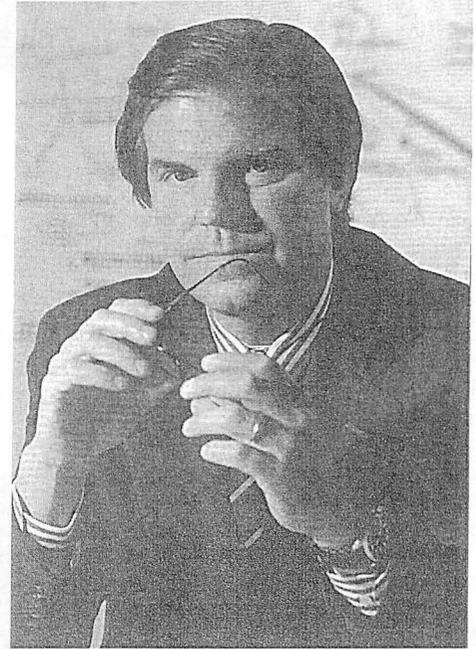
**Winter Hours:** Open Tuesday-Sunday, 10am-5pm. Closed Mondays, except Boston School holidays and vacations. Closed Thanksgiving, Christmas, and New Year's Day.

**Admission:** Adults \$7.00, students, children five and up, and seniors \$5.00. Half price Sunday 3-5pm. Free to Museum members and children four and under.



On the West Coast (at the Santa Clara (CA) Convention Center), Brenda Laurel will ask questions of the players.

# The Computer Bowl 2.0 in Cyberspace



Photograph: Seth Renick/Courtesy MIT

Nicholas Negroponte will be posing questions at the World Trade Center in Boston.

The first series of five Computer Bowl games ended brilliantly last May. By the time the 1994 All-Star Bowl was all over, The Computer Bowl® earned a place in computer industry lore and a total of more than \$1.7 million over five years for The Computer Museum's educational programs. The challenge for this year's Bowl, to be held April 20, is to sustain the momentum and expand the Bowl's reach to help meet the ever-increasing needs of the Museum's educational programs.

To meet that challenge, Presenting Sponsor Apple Computer, Electronic Cafe International and America Online are joining with PBS' "Computer Chronicles" to broaden the Bowl's reach. Electronic Cafe will spearhead the Bowl's move to "cyberspace." In essence, the East and West teams will stay on their respective coasts and play the game via the latest in communications technology: high-speed audio and video transmission lines. On each coast, computers will handle the video, sound and particularly the players' buzzers. Using T-1 transmission lines, the computers will exchange their audio and video data real-time so there is no perceptible delay.

Simultaneously, thousands of America Online subscribers will participate real-time from their personal computers as the service will make the questions available as soon as they are read to the teams. Participants will be able to score them-

selves against the real Bowl players to see how they match-up. Prizes will be awarded to the highest scoring on-line participants.

"It's a natural step for The Computer Bowl to use new technology to enhance loyal Bowl fans' sense of presence at the event, as well as interest new audiences. The Computer Bowl is an important event, and this kind of innovative attitude will ensure that it survives," said Brenda Laurel, celebrated 20-year industry veteran. Laurel and Nicholas Negroponte of MIT's Media Lab will share the duty of asking the questions of this year's Bowl players. Chris Morgan will serve as "Game-Master."

The 1995 Bowl players are an exciting mix of personalities and talents. For the West Coast, the players are: Eric Benhamou, president & CEO, 3 Com Corporation; Steve Blank, president & CEO, Rocket Science Games; Andy Hertzfeld, vice president, General Magic Corporation; Roel Pieper, president & CEO, UB Networks; Cheryl Vedoe, president & CEO, Tenth Planet.

The players for the East Coast are: Joseph Alsop, president & CEO, Progress Software; Katherine Clark, CEO, Landmark Systems Corporation; Paul Gillin, editor, Computerworld Magazine; John Landry, senior vice president, Lotus Development Corporation; Carl Ledbetter, president, AT&T Consumer Products Division.

This year's game will also become more visually stimulating for television audiences. The new format will make use of "virtual sets" sponsored by Intel Corporation. The players will appear to be playing from deep within a computer with the specific location in the computer changing for each new quarter. The teams will actually be at the Santa Clara (CA) Convention Center and Boston's World Trade Center.

In addition to the companies listed above, sponsors for this year's game include: American Airlines, Association for Computing Machinery, Cirrus Logic, CKS Partners, Computerworld, Cunningham Communication, Kleiner Perkins Caufield & Byers, Powersoft Corporation, Price Waterhouse, Progress Software, Silicon Valley Bank, Stratus Computer, UB Networks and Visix Software.

For sponsorship and ticket information, please contact Carol Welsh, director of the Museum's West Coast Office, at (415)323-1909 or e-mail her at: [welsh@tcm.org](mailto:welsh@tcm.org)

# THE NETWORKED PLANET Opens

Since *The Networked Planet* opened in November, attendance is 50 percent higher than it was last year. Excitement over the \$2 million exhibit was sparked by wide-spread media coverage and the Museum's first-ever television ad campaign. A series of Boston Globe stories culminated opening day in a front page "Living/Arts" feature. A two-day visit from Gerd Meissner of the German news magazine, *Der Spiegel*, produced two features. The AP, NPR, *BusinessWeek*, and local TV also covered the exhibit. With donations from WBZ-TV and the sponsorship of Lotus Development Corporation, a brilliant 30-second TV spot took viewers down a futuristic Information Highway, composed of screen images from the exhibit.

The exhibit, a microcosm of global networks, is linked via Novell's NetWare. After visitors log in, choose a Network Guide, and decide to share their information with other visitors or keep it private, their activities are tracked throughout the exhibit and a report is given at the end. Live data feeds of the FAA, an ILX system and NEXRAD provide instant access to large-scale networks used to manage air traffic, track transactions on the New York Stock Exchange, and forecast the weather. The exhibit also offers an introduction to the Internet and on-line services through first-hand experiences. The critical link onto the Internet is maintained by a Stratus fault-tolerant computer via Sprint T-1 lines.

For Harvard Community Health Plan's Dr. Bob Kupsc, the exhibit's interactivity is its strongest suit. "Visitors actually experience and learn more than if I just tell them." In January during a special weekend of hands-on demonstrations, Dr. Kupsc showed Jerry Kutcher of Tewksbury, MA, how to design a healthier work environment, using the exhibit's model office area. "I knew what I was doing was wrong. But I didn't know how wrong," said Kutcher, who can now relieve his neck pain by simply adjusting his terminal.

*The Networked Planet* meets an educational need of school groups. Seekonk High Computer Literacy teacher Peg Cassels explained that her school had just put in a computer lab. "This exhibit is the most interesting, informative thing I've seen on networks. It gives kids a real taste. Next time, I'll plan a three-hour visit, not two."

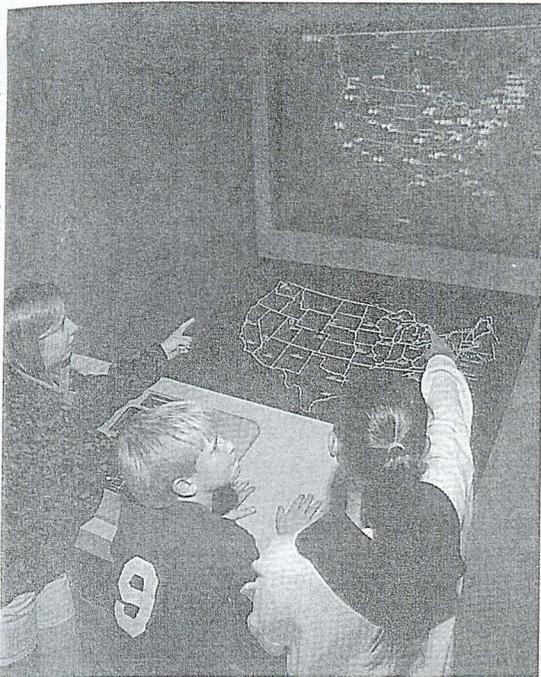
*The Networked Planet* gives people the opportunity to understand what the information highway really is.

This exhibit is the cutting-edge example.

—US Rep. Edward Markey (D-Malden)



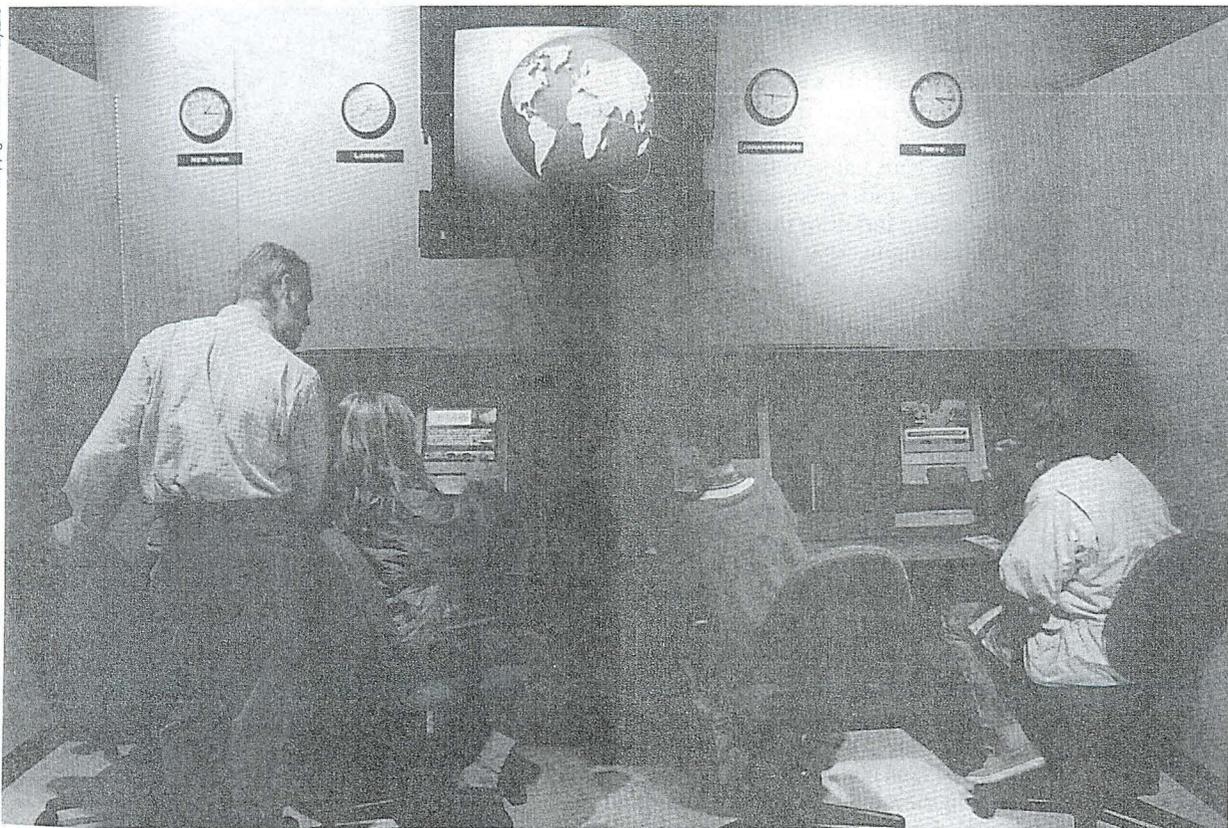
In December, Congressman Markey, outgoing Chairman of the Subcommittee on Telecommunications and Finance, joined students for a tour of the Information Highway. The exhibit's treatment of privacy prompted a spirited discussion. Markey noted that the real world does not give the same choice of privacy as the exhibit. From the left: Executive Director Oliver Strimpel and US Rep. Markey explore the Internet Sampler with students.



Young people discover how the FAA uses computer networks to manage air traffic across the United States. An up-to-the-minute feed provides access to the actual data used to resolve congestion. A screen display shows all of the commercial flights in the sky at that moment. Visitors can zero in on one airport to see what is landing.



Visitors use a Key Card to log onto the exhibit's network. After deciding if their Network Guide's speech will be captioned in English or Spanish, they type in their name. They choose to share this information with other visitors—which allows them to “peek” at others—or keep it private. Those who share can press the “Who's Out There?” button to see where other visitors are and read their personal information. The Guides discuss the societal impact of networking.



Using a program that simulates the S.W.I.F.T. global banking network, visitors discover how rapidly and safely \$1 million can be transferred from Holland to Boston. They also experience the volatility of global markets by seeing how rapidly prices fluctuate as they try to invest \$1 million in stocks and art.

## Auction on World Wide Web

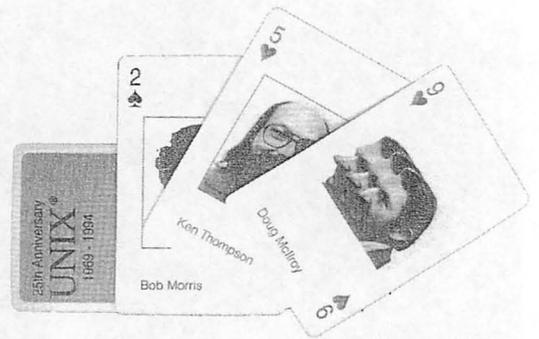
The Computer Museum will hold its Second Internet Auction May 22-26, 1995. This year's auction will take place on the World Wide Web. Items include computer memorabilia, products and services. Illustrated descriptions will be available through an on-line catalog. The software for the WWW Auction is part of the launch of a new, novel interactive shopping service being developed by Jerry Kaplan and Alan Fisher.

While making use of the real-time, interactive elements of the Net, the Auction will also feature proxy bidding. The server will actively bid for those who are unavailable during the Auction or do not have access to an Internet connection. The technology of the Web

will allow for many additional enhancements which, with real-time bidding, will create the feel of participating in person.

Items for the auction include a pre-World War I Dictaphone with Ediphone; signed, limited edition paintings from "AARON," Harold Cohen's artificially intelligent robotic artist; a six-foot yellow slide rule; a luggable Osborne; and an original BASIC manual signed by Tom Kurtz.

A text listing of auction items will be available for those who are not on-line. Proxy bidding will be available on-line or through the West Coast Office or the Museum Store in Boston. For more information, please e-mail: [welsh@tcm.org](mailto:welsh@tcm.org) or call (415)323-1909.



One of this year's auction items is this deck of playing cards featuring faces of UNIX pioneers. The USENIX Association, the original UNIX users group, offered the deck to honor UNIX contributors on its 25th anniversary in 1994.

## Collections

### "Letter" Goes On-Line

The Collections Department has launched an Internet-distributed "Occasional Letter from the Historical Collection." The letter helps us maintain contact with the far-flung core supporters of the historical collection and is an important step toward the development of on-line information on the Museum's historical collection.

The first letter, published in November, features an outline of the Museum's collecting guidelines, and the December letter relates the story of an extensive donation of early Remington Rand and Univac components to the Museum. In addition to the main article, each letter contains behind-the-scenes news, updates on new acquisitions, requests for informa-

tion, and a "wish list" of artifacts the Museum hopes to add to the collection.

The wish list has already netted us an important acquisition. The Intel Corporation Museum has promised to donate a Busicom, the calculator that spurred the development of the first microprocessor, the Intel 4004.

If you would like to subscribe to the newsletter or read back issues, please send e-mail to: [collections\\_news@tcm.org](mailto:collections_news@tcm.org) Include your name, e-mail and postal addresses, and, since, at present, we are processing inquiries manually, a simple note telling us what you would like.



Busicom calculator

## The Computer Clubhouse

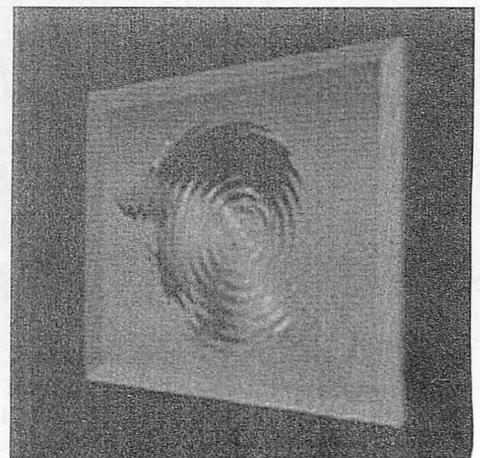
### On-Line Gallery Opens

Since The Computer Clubhouse opened to Boston's underserved youth in 1993, computer graphics has been one of its most popular project areas. While learning to use professional imaging software, Clubhouse members have also created self-portraits, tableaux, collages, and cartoon characters. To make these images available to the rest of the world, members and mentors have designed an on-line gallery for the World Wide Web.

The "remote visitor" clicks on an artist's picture to access his or her exhibit page, featuring thumbnail sketches of their work. A full-screen image may be viewed by clicking on the corresponding sketch.

Participant Mike Lee, 19, said that gaining useful computer skills at the Clubhouse has also made him "more aware of my world." Boston University student and mentor Dan Lottero found it rewarding to introduce the participants to the Internet and give their projects "a new life on-line."

The gallery has generated interest in the Internet among other Clubhouse participants. Some are creating their own WWW pages. Plans include expanding the gallery, adding theme shows, and inviting young people from other sites to participate. Access the gallery via the Museum's Web site: <http://www.net.org/>



Reflect by Mike Lee

# A Salute to Our Supporters

## Exhibit & General Support

1/94 - 12/94

**\$250,000 or more**  
Intel Digital Education and Arts Program

**\$100,000 or more**  
NYNEX Corporation  
Sprint  
S.W.I.F.T.

**\$50,000 or more**  
3Com Corporation  
Intel Foundation  
Massachusetts Cultural Council

National Endowment for the Humanities  
Phoenix Technologies Ltd  
Quantum Corporation

**\$25,000 or more**  
Apple Computer, Inc.  
Banyan Systems Inc.  
C. Gordon Bell  
Cabot Corporation Foundation

Cisco Systems  
Computerworld  
William H. Gates, III  
Harvard Community Health Plan Foundation  
Hewlett-Packard Company  
Lotus Development Corporation

Paul and Kathleen Severino  
Stratus Computer, Inc.  
Thomson Financial Services  
Wellfleet Communications, Inc.

**\$10,000 or more**  
AT&T Foundation  
The Bodman Foundation  
Chipcom Corp.  
Kensington Microwave Ltd.  
Kleiner Perkins Caufield & Byers

The Morgridge Family Foundation  
Novell, Inc.  
Oracle Corporation  
Powersoft Corporation  
Price Waterhouse  
Sega Foundation  
UB Networks, Inc.  
Viewlogic Systems, Inc.  
Visix Software Inc.

**\$5,000 or more**  
AT&T Consumer Products  
Boston Globe Foundation  
Cirrus Logic  
David Liddle  
Network General  
Howard Salwen  
Schrafft Charitable Trust

**\$1,000 or more**  
Adaptec, Inc.  
Alex Brown & Sons  
Anonymous  
Apple Computer, Inc.  
Asset Management Company  
Gwen Bell  
Borland International  
Brobeck Phleger & Harrison  
Bronner Slosberg Humphrey, Inc.

Owen Brown  
Richard M. Burnes, Jr.  
Choate, Hall & Stewart  
Chroma Copy

Chronologic  
CIO Publishing, Inc.  
Linda and Neil Colvin  
Scott Cook  
Coopers & Lybrand  
Andrea Cunningham  
William H. Davidow  
Gardner and Karen Hendrie  
Peter Hirshberg  
Charles House  
Intermetrics, Inc.  
LAN Times  
Daniel C. Lynch  
Mathworks  
Michael A. McConnell  
Patrick J. McGovern  
James L. McKenney  
The Meek Foundation  
Microsoft Corporation  
Miller Communications  
Anthony Scott Mize  
David Nelson  
New York Hall Of Science  
Object Management Group  
Elizabeth Patrick  
PC Week  
PC World  
Ropes & Gray  
John F. Shoch  
Stride Rite Charitable Foundation  
Testa, Hurwitz & Thibeault  
The Weber Group  
Ziff-Davis Interactive

## Corporate Members 1/94 - 12/94

**\$10,000 and above**  
Digital Equipment Corporation  
IEEE Computer Society  
Microsoft Corporation  
Powersoft Corporation  
Unisys Corporation

**\$5,000 and above**  
Adobe Systems Inc.  
AT&T  
Banyan Systems Inc.  
Compaq Computer Foundation  
IBM International Foundation  
International Data Group  
The Mathworks  
MITRE Corporation  
National Semiconductor Corporation  
Stratus Computer, Inc.  
Sun Microsystems  
Symantec Corporation

**\$3,000 and above**  
Addison-Wesley Publishing  
Advanced Micro Devices  
Automatic Data Processing  
Bank of Boston  
Boston Edison Company  
Canadian National Railways  
Coopers & Lybrand  
C.S. Draper Laboratories  
The Gillette Company  
InfoSoft International  
Lotus Development Corporation  
MAXIS  
Medical Information Technology  
NEC Systems Laboratory  
Inc.

NYNEX Corporation  
Rockwell International Corp.  
Synneretics Inc  
Wellfleet Communications, Inc.  
Ziff Communications  
**\$1,000 and above**  
Advanced Technology Ventures  
Advanced Visual Systems Inc.  
Analog Devices Inc.  
Applied Technology Investors  
Avid Technology  
Bolt Beranek and Newman Inc.  
Bull HN Information Systems Inc.  
Cabot Corporation  
Cambridge Technology Partners  
Charles River Ventures  
Choate, Hall & Stewart  
Computervision  
Corporate Software Inc.  
CSC Index  
Davis, Hoxie, Faithfull & Hapgood  
Deloitte & Touche  
The Dow Chemical Company  
Epsilon  
Ernst & Young  
First Boston Corporation  
Fleet Bank of Massachusetts  
Fujitsu America, Inc.  
Gensym Corporation  
Goldman Sachs & Company  
Greylock Management Corporation  
GTE Laboratories Inc.  
Hanify & King  
Heidrick & Struggles  
Hill & Barlow  
Houghton Mifflin Company  
Intermetrics, Inc.  
Legent Corporation  
Liberty Mutual Insurance Company  
Loomis, Sayles & Company, L.P.  
Mazonson, Inc.  
McGraw-Hill, Inc.  
McKinsey & Company  
Mediatrends, Inc.  
Mercury Computer Systems Inc.  
Microcom, Inc.  
Miller Communications  
The Millipore Foundation  
Mitsubishi Electric Research Lab  
Moody, Lynn & Co.  
Natural Microsystems  
Network General  
The New England  
Nintendo of America  
Nissan Motor Company, Ltd  
Nixon & Vanderhye  
Object Design  
Pell Rudman & Co., Inc.  
Price Waterhouse  
The Research Board  
Ropes & Gray  
Rourke & Company  
Shawmut Bank  
Silicon Valley Bank  
Software Publishing Corporation  
SynOptics

Tandy Corporation  
TASC  
Technology Research Group  
Teradyne  
Viewlogic Systems, Inc.  
VMARK Software  
The Weber Group  
Wolfram Research Inc.  
XRE Corporation  
**\$500 and above**  
Delta Parts  
Gustin Partners, LTD.  
Open Software Foundation  
**Annual donors 1/94 - 12/94**  
**\$5,000 and above**  
The Bodman Foundation  
Gardner Hendrie and Karen Johansen  
David Nelson and Pat Collins Nelson  
Tony and Kitty Pell  
John William and Susan Poduska  
Paul and Kathleen Severino  
Charles A. and Shirley Zrakat  
**\$2,500 and above**  
David and Nancy House  
John R. Mashey and Angela Hey  
Benjamin and Maureen Robelen  
F. Grant and Dorritt M. Saviers  
Paul and Kathleen Severino  
**\$1,000 and above**  
Charles and Constance Bachman  
Steve F. Barnebey  
Edward Belove and Laura Roberts  
Erich Bloch  
Gary Boone  
Richard M. Burnes, Jr.  
Richard P. Case  
Maureen and Steve Cheheyl  
Stephen and Lois Coit  
Howard E. Cox, Jr.  
John J. Cullinane  
Eileen and Edson de Castro  
Jean E. de Valpine  
J. Thomas Franklin  
Samuel Fuller  
Cliff Gerring  
Roger S. Gourd  
Trip Hawkins  
Roger and Marney Heinen  
James J. Horning  
J. Milton Hutson  
Katharine and Bill Jose  
Jeffrey C. Kalb  
David and Deborah Kaplan  
Steven and Michele Kirsch  
Jay Koven and Juliet Sutherland  
Daniel C. Lynch  
Barry Margolin  
Michael Moody  
Laura Barker Morse  
Nicholas and Nancy Pettinella  
Paul R. Pierce  
Colonel James A. and Noreen M. Pitts

Jon Rubinstein  
Jean Sammet  
Naomi O. Seligman  
Hal B. Shear  
John J. Shields, III  
John F. Shoch  
Michael Simmons  
Joel D. Sugg  
James Swartz  
Dorothy A. Terrell  
Allan and Nadine Wallack  
**\$500 and above**  
Allan V. Abelow  
Amesbury Public Library  
Brookline Public Library

Burlington Public Library  
John G. Carberry  
Stephen Crosby  
Bob Frankston  
Paul Gomory  
Hingham Public Library  
Hopedale Public Library  
Max and Jo Hopper  
Ernest and Elizabeth Jennes  
Peter S. Kastner  
Michael and Katherine Kolowich  
John N. Little  
Lynn Public Library  
Isaac R. Nassi  
Arthur H. Nelson  
Ocean Software  
James N. Porter  
Duane A. Rice  
Dennis Ritchie  
Robbins Library  
Robert Treat Paine Association  
David S. Rose  
Sawyer Free Library  
Edward A. Schwartz  
Dan Schwinn  
Mr. and Mrs. Andrew Snider  
Somerville Public Library  
Max and Nancy Steinmann  
Lawrence Tesler  
Thayer Public Library  
Wellesley Free Library  
William A. Wulf

**\$250 and above**  
James and Roberta Bell, Leo L. Beranek, Howard and Holly Cannon, John G. Carberry, Richard Carpenter, Mr. and Mrs. Arthur Carr, Christopher Chabris, William Christensen, Randall Davis, Donald R. Daykin, Eleanor and Lloyd Dickman, Lucien Dimino, Andrew and Sarah Feit, Norman Fong, Brigitte and Jean-Louis Gasse, Stephen Gross, Michael and Lois Gutman, Theodore A. Hess, Robert B. Hoffman, David and Jane Hubbard, Richard H. King, Robert and Judy King, Arnold Kraft, Linda Lawrence, Judith and Jon Liebman, Neil Lincoln, John D. C. Little, Carl Machover, Julius L. Marcus, Math/Science Upward Bound, Tron McConnell, F. Warren and Karen McFarlan, Todd Medlock, George A. Michael, Charles and Kathy Minter, Robert and Barbara Morrill, Nantucket Nectars, The Noyce-Labombard Family, Marilyn and Anthony Oettinger, Katherine C. Patterson, Audrey R. Reith, Douglas Ross, Michael J. Samek, Benn L. Schreiber, Earl and Mary Schweppe, Michael Sedita, Lee S. Sproull, Robert E. Stewart, Oliver and Harriet Strimpel, Michael G. Thompson, Warren G. Tisdale, Robert J. Trudel

The Museum recognizes all In-Kind Donors, Donors of \$100 and more, and Volunteers in its Annual report.

We apologize for any inadvertent omissions from our donor list. Please inform us of any errors so that we may correct our records.

**Upcoming Events & Programs 1995**

April 1-May 29

**The Robotic Artist:  
AARON in Living Color**

M—April 2

Members-Only Preview 4-6 p.m. For more information, call Julie Rackliffe at (617)426-2800 x432. See page 1.

April 20

**The Computer Bowl**

Watch The Computer Bowl in "cyberspace" at parties in Boston or Santa Clara. For more information, call Carol Welsh at (415)323-1909. See page 3.

May 22-26

**Internet Auction 1995**

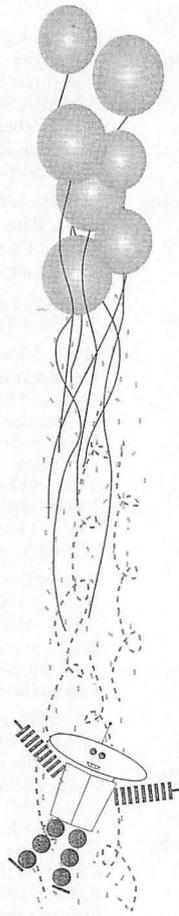
The Museum's second on-line auction starts on the World Wide Web. For more information, call Carol Welsh at (415)323-1909. See page 6.

July 17- August 10

**Computer Camp**

One-week sessions start every Monday. See to the right.

M—Members-Only Events



**Whirlwind Birthday Parties**

Just like the Whirlwind computer of the early 1950s, a Whirlwind birthday party at the Museum is big! Host your child's next birthday at The Computer Museum and enjoy a fun-filled, full-service package that includes birthday cake, decorations, a private party room, gifts for the party-goers, a supervised scavenger hunt, and unlimited access to all five exhibit galleries.

**Computer Museum Camp**



Computer Camp sessions are fully booked for school vacation weeks in April, but space is available for week-long summer sessions for children ages 8-15. Sessions begin July 17 and run 9am-4:30pm Monday-Friday. The Computer Museum Computer Camp offers a unique combination of hands-on experiences in The Computer Clubhouse and guided activities in our five exhibit halls.

For more information on birthday parties and Computer Camp, contact Maria Bruno at 426-2800 x334 or e-mail: [bruno@tcm.org](mailto:bruno@tcm.org)

**The Museum offers valuable challenges for Volunteers. Call (617)426-2800 x433**

**M E M B E R S H I P**

Members get free admission for one year; The Computer Museum *NEWS*, a newsletter of Museum activities; the *Annual* report; invitations to exhibit previews and members-only events; advance notice of exhibitions and lectures; and a 10% discount on purchases over \$5 in the Museum Store. For more information, call the membership department at (617) 426-2800 x432.

**Individual Memberships**

\$35 One-Year

\$60 Two-year

\$25 One Year Student

**Family Memberships**

\$50 One-Year

\$90 Two-year

— Number of family members

I would like to make a tax-deductible charitable contribution.

My check, payable to The Computer Museum, is enclosed in the amount of \$ \_\_\_\_\_

Or, charge to my:  Mastercard  Visa  American Express

Card#: \_\_\_\_\_ Expiration Date \_\_\_\_\_

Signature: \_\_\_\_\_

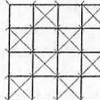
Name: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone ( ) \_\_\_\_\_

Join or renew via e-mail: [rackliffe@tcm.org](mailto:rackliffe@tcm.org)



**The Computer Museum**

300 Congress Street  
Boston, MA 02210  
(617) 426-2800  
[computer\\_info@tcm.org](mailto:computer_info@tcm.org)

Address Correction Requested

Nonprofit Org.  
U.S. Postage  
PAID  
Boston, MA  
Permit No.55897

The Computer Museum

# NEWS

## Snapshots of a Revolution New Exhibit Captures Pivotal Moments in PC History

It was March 1996, and Intel was searching for an appropriate way to commemorate the 25th anniversary of the microprocessor at the upcoming Fall COMDEX. Intel Museum Curator Jodelle French remembered a retrospective exhibit The Computer Museum had curated for Data General at the 1995 Fall COMDEX. French sought out Gwen Bell at The Computer Museum to brainstorm ideas for creating the milestones of the microprocessor. That began a rare, cooperative relationship in the museum world: a corporate museum pairing with The Computer Museum. The partnership ultimately resulted in a historic personal computing exhibit, parts of which were recently installed in the Museum in Boston.

"I knew we couldn't curate this exhibit by ourselves," recalls French. "We could do an exhibit about microprocessors but what we were really talking about was the 25th anniversary of a revolution." French and Bell worked side by side to curate the "Museum at COMDEX," co-sponsored with SOFTBANK COMDEX, Motorola and Ziff-Davis. French recalls of the co-curating relationship, "If it had been anyone else but Gwen, we would have gotten bogged down in lists of artifacts."

Intel's foresight to form the partnership assured an inclusive retrospective that highlighted the advancements made by a variety of microprocessors. The "Museum at COMDEX" attracted 30,000 people, or 10 percent of the attendees, in five days.

When it was over, Intel and SOFTBANK donated the vignettes from the exhibit to The Computer Museum. Installation in Boston was sponsored by Museum Board members Michael Simmons and David Nelson. Subsequently, The Intel Museum became a founding corporate supporter of The Computer Museum History Center. A win-win situation for all.

### Nostalgic Journey

The most popular COMDEX vignette installed at The Computer Museum is a life-sized re-creation of a 1970s' hacker's garage, which captures the essence of this era.

"We were a group with a purpose: the revolution of home computers," Steve Wozniak, co-founder of Apple Computer, reflected in 1986 at The Computer Museum. "I couldn't afford a computer so I started to think about building one for myself." Woz built his computer, the Apple I, in 1976, testing it in the now-legendary garage of his friend and Apple co-founder, Steve Jobs. The Hacker's Garage was unveiled in June, with enhancements to two existing 1980s' vignettes that re-create early uses of the IBM PC and Apple Macintosh.

Located in the Museum's historical exhibit, *People and Computers: Milestones of a Revolution*<sup>™</sup>, the three vignettes highlight important aspects of the PC revolution, which was spurred on by the invention of the microprocessor by Intel in 1971. By 1974, hobbyists were using microprocessors such as the Motorola 6800, Intel 8008 and RCA 1802 to assemble their own "home-brew" computers in workshops similar to the Hacker's Garage. The two 1980s' milestones represent the next steps in the revolution: the personal computer's commercialization and vastly expanded use by individuals and large organizations.

"It was an incredible time," says Dan Bricklin, co-inventor in 1979 of *VisiCalc*, the first electronic spreadsheet written.



The Garage not only features vintage PC artifacts, but also has nearly everything a 1970s' hacker might want—from an oscilloscope (to test the boards) to a Barcalounger to take a snooze. Can you find the Apple I?

(continued on p.4)

# The Many Themes of the Museum

In preparing a strategic plan for the Museum's exhibits in 1988, the Exhibits Committee dived the universe of computing into the following themes:

1. evolution
2. technology (how computers work)
3. applications and social impact
4. people of computing

By 1992, we had created large-scale exhibits on the first three themes, later adding upgrades (such as the 1995 redesign of *The Walk-Through Computer™* and new application areas (such as *The Networked Planet™* in 1994). Although these exhibits were successful, we still were searching for a compelling way to present the *people* of computing.

Serendipity intervened when Tony Rea, a long-time supporter of the Museum, introduced founding president Gwen Bell to his childhood friend Louis Fabian Bachrach III, from the renowned family of portrait photographers. Louis was intrigued by the Museum. It wasn't long before he and Gwen came up with *Wizards and Their Wonders: Portraits of Computing*, a project toward which he would devote a full year making portraits of the people in the forefront of computing in America. As a result, the Museum will at last have a top-quality exhibition on the people of computing! The exhibit, which will incorporate artifacts from the collections and will be chronicled in an elegant coffee-table book, opens at the National Academy of Sciences in Washington, D.C., in October, and at the Museum in November. (See article on page 4.)

## Evolving Interest in History

In 1984, when the Museum opened in Boston, its exhibits featured the historical collections. As time went on, hands-on, educational exhibits became our hallmark, with artifacts playing a lesser role. Nevertheless, our collections activities continued, albeit in the "back room."

Recent years, however, have witnessed a broad awakening of interest in the history of computing. For one thing, there is more history than there was 15 years ago (remember, the first digital electronic computer was built only 51 years ago). Furthermore, many people who participated actively in the early years of computing have now reached the age where they begin to look back over their careers.

In 1996, the Museum began to expand its historical activities, creating The Computer Museum History Center in Silicon Valley. We

are now concentrating more resources on the history of computing and expanding our exhibit programs on the subject. Already completed is a full-size "hacker's garage," a brand-new milestone in the Museum's permanent historical exhibit, *Milestones of a Revolution™*. (See article on page 1.)

A series of historically themed, artifact-rich exhibits are also being developed and displayed on both coasts. The first, *25 Years of the Microprocessor*, will open in Boston in January. Based

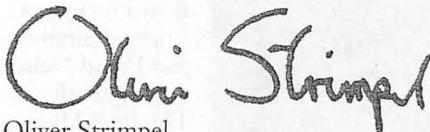
Recent years have  
witnessed a broad  
awakening of interest  
in the history  
of computing.

on an exhibit curated by the History Center for last October's Microdesign Resources Conference in Silicon Valley, it includes many of the important microprocessors, starting with the 1971 Intel 4004 and ending with the multi-million transistor chips that power today's personal computers and workstations. Early personal computer and other microprocessor-based devices, from watches to running shoes, are also included.

The History of Computing timeline on our website is being expanded to the year 1990, and will include strands that pick out milestones in the evolution of the Internet and in the development of robots and artificial intelligence. The website will also feature "This Day in History," which will highlight a different nugget of computer history every day of the year.

A good portion of the Museum's collections are now accessible at the History Center's storage site at Moffett Field in Mountain View, Calif. We invite you to visit, but please call/e-mail first (415-964-1231 or 415-604-2575/collections@tcm.org), as you need a security badge to enter the area.

I hope you'll come and see our new exhibits on the evolution of computing, in Boston, in Silicon Valley, or at [www.tcm.org](http://www.tcm.org). As always, if you think you have something we should be saving for posterity, contact us at [collections@tcm.org](mailto:collections@tcm.org).



Oliver Strimpel  
Executive Director  
[stripel@tcm.org](mailto:stripel@tcm.org)

## Board of Trustees (As of 6/15/97)

Larry Weber (chair)  
*The Weber Group*

Richard P. Case (vice chair)  
*President's Commission on  
Critical Infrastructure Protection*

Oliver Strimpel  
Executive Director  
*The Computer Museum*

Gwen Bell  
Founding President  
*The Computer Museum*

Lynda Schubert Bodman  
*Schubert Associates*

Richard M. Burnes, Jr.  
*Charles River Ventures*

J. Thomas Franklin  
*Lucash, Gesmer & Updegrave*

Samuel H. Fuller  
*Digital Equipment Corporation*

Roger A. Heinen, Jr.

David L. House  
*Bay Networks, Inc.*

Christine Hughes  
*Secure Computing Corporation*

James L. McKenney  
*Harvard Business School*

Laura Barker Morse  
*Heidrick & Struggles*

David Nelson  
*Savoy Software Development*

Anthony Pell  
*Pell, Rudman & Co., Inc.*

Mitchel Resnick  
*Massachusetts Institute of Technology*

Edward A. Schwartz  
*New England Legal Foundation*

Hal B. Shear  
*Research Investment Advisors, Ltd.*

Leonard J. Shustek  
*Network General Corporation*

Lee S. Sproull  
*Boston University*

Dorothy A. Terrell  
*SunExpress*

Charles A. Zrakat  
*Mittek Systems*

**General Counsel**  
*Lucash, Gesmer & Updegrave*

## To Reach Us

<b>General Information</b>	(617) 423-6758
<b>Group Visits</b>	1-800-370-CHIP
<b>Museum Offices</b>	(617) 426-2800
<b>The Computer Bowl</b>	x378
<b>The Computer Clubhouse</b>	x347
<b>Functions</b>	x340
<b>Membership</b>	x432
<b>Museum Store</b>	x306
<b>Public Relations</b>	x341
<b>Volunteer Program</b>	x433
<b>Fax (Museum Offices)</b>	(617) 426-2943
<b>History Center Offices</b>	(415) 604-2575
<b>Collections</b>	(415) 604-2578
<b>Fax (History Center)</b>	(415) 604-2594

For Museum staff, e-mail: [<lastname@tcm.org>](mailto:lastname@tcm.org)  
For general Museum information, e-mail:  
[<computer\\_info@tcm.org>](mailto:computer_info@tcm.org) with request in  
subject line and send help instructions as the  
body of the message.

Via World Wide Web:  
[<http://www.tcm.org/>](http://www.tcm.org/)

**Summer Hours:** Open daily, 10am-6pm, through  
Labor Day.

**Winter:** Open Tuesday-Sunday, 10am-5pm.  
Closed Mondays, except Boston School holidays  
and vacations. Closed Thanksgiving, Christmas,  
and New Year's Day.

**Admission:** Adults \$7.00; seniors, students, and  
children \$5.00. Half price Sunday 3-5pm. Free to  
Museum members and children two and under.

# Museum's Clubhouse Expands Its Horizons

## New Satellites Open in Boston and Stuttgart, Germany

Five years ago, the Computer Clubhouse was little more than a dream.

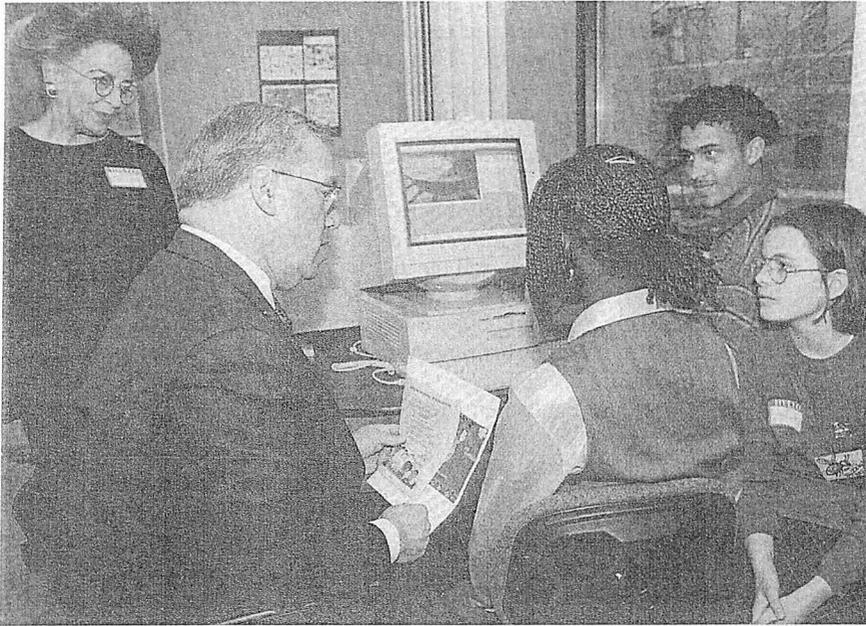
Now, the Clubhouse reaches thousands of inner-city youths in Boston and in Germany with four Clubhouse satellites and new programs enabling kids to expand their horizons using computers. Alex Owumi, 12, of Dorchester, Mass., sums it up: "Before coming to the Clubhouse, I had nothing to do. I just played video games. Here, there's a wonderful feeling—with a bunch of computers, smart people, peace, no gangs, no fights. Learning about computers has given me a new world."

In 1993, The Computer Museum, in collaboration with the MIT Media Laboratory, founded the Clubhouse to serve kids with little access to computers at home or in school. Every weekday afternoon and on Saturdays, the Clubhouse comes alive, as youths aged 10 to 18 work with adult mentors to explore sophisticated software and computer technology, creating animations, music, robotic devices, science simulations, and Web pages.

### Building a Network

Since last summer, the Museum has helped launch satellite versions of the Clubhouse at three inner-city community centers in Boston: the Roxbury Boys and Girls Club, the Patriots' Trail Girl Scout Council, and United South End Settlements (USES). In March, demonstrations of Clubhouse kids' computer expertise brought Boston Mayor Thomas M. Menino, TV crews, and over 100 Clubhouse families and supporters to USES.

Setting up satellites in Boston is the Museum's first step in supporting a Clubhouse network around the world. In April 1997, the Computer Clubhouse Esslingen (outside Stuttgart, Germany) became the first non-U.S. addition. Other satellites are in the works at The Brooklyn Children's Museum in New York, in a community-based organization in Worcester, Mass., and on a Native American reservation in the Midwest.



Photograph: AnnMarie Rowlands; Courtesy USES

USES President Frieda Garcia watches as Boston Mayor Thomas M. Menino talks with kids at the USES Clubhouse.

### Beyond Black Boxes

In addition to expanding geographically, the Clubhouse is creating new programs. One, organized with the Patriots' Trail Girl Scout Council, MIT Media Lab, and Wellesley College, enables inner-city girls to open up the "black box" of science, get their hands on scientific tools, and gain confidence using scientific concepts. Funded in part by the Massachusetts Cultural Council, "Beyond Black Boxes" lets Clubhouse Girl Scouts build instruments using LEGO, sensors and "Crickets," tiny programmable devices developed at the MIT Media Lab. Then, working with women mentors who serve as role models, the girls use these tools to gather and analyze data.

For example, one group designed a weather balloon with a Cricket "pouch" to explore atmospheric conditions at different altitudes. Two other girls developed an "active goldfish bowl" to track how often a fish swam through a tiny house inside the bowl. "We thought it would be fun," says sixth-grader Jennifer Juste, "but we didn't know if it would work." Project partner Woodline Maignan adds, "At first, it was hard to program, but it's easy now because we worked on it a lot."

### From Clubhouse to College and Career

Another initiative, "Clubhouse-to-College/Clubhouse-to-Career," launched with the support of the NYNEX Foundation and American Express, helps kids leverage their Clubhouse experience and skills, exposing them to professional and academic opportunities that might not otherwise be available. Field trips take Clubhouse members to colleges and companies such as Lotus and BankBoston for an inside look at professionals using technology in real situations. At the Clubhouse, they learn how to create a resume, interview, plan and set

goals, while applying for internships in various fields.

"We treat youth more like colleagues," says Mitchel Resnick, Clubhouse advisor and co-founder, and associate professor at MIT's Media Lab. "We give them genuine feedback and push them to consider new possibilities."

Some young people have already found jobs based on their Clubhouse experience and skills. One Clubhouse "alum," a senior at Morehouse College in Atlanta, is doing a fellowship at the MIT Media Lab this summer. He hopes to set up a Clubhouse for low-income kids when he returns to Atlanta in the fall.

When high school senior Steve Osemwenkhae came to the Clubhouse two years ago, he says, "I didn't know anything about computers." Recently, he applied for a graphics internship at a top-notch Cambridge, Mass., PR firm. "They seemed to really like my portfolio. I hope I get it, but even if I don't, it gives me something to shoot for." This summer, Clubhouse members were invited by the PBS program *P.O.V.* to submit art to its website for a show on street violence and its impact on kids' lives. Steve's work was selected and featured on *P.O.V.* Interactive in June.

(continued on p. 5)

## Snapshots of a Revolution (continued from p.1)

"The Garage is really a metaphor for a way of thinking—that anyone could do it—a kind of grassroots entrepreneurial spirit. Actually, Bob Frankston and I worked on *VisiCalc* in his attic, which was more typical of the East Coast. Out West, hackers worked in garages, owing to the earthquake risk."

### The '70s: Hobbyist Heaven

The Museum draws on artifacts from its collections, including the Apple I and Altair 8800, to furnish the Garage. Rich in period detail, it includes a 1960s' Model 33 Teletype (widely used before keyboards and printers were standard), an oscilloscope, a ham radio, an old TV tube, a drum set, a guitar, and posters of a young Mick Jagger and the Beatles.

Sitting on a worktable in its own homemade wooden box is Woz's Apple I board. One of the rarer items, the Apple I was used primarily for developing programs, playing games or running BASIC. Buyers supplied their own cases for this easy-to-assemble

single-board computer that ran on an MOS Technology 6502 microprocessor. When Steve Jobs got the first order from the Byte Shop for 100 Apples at \$500 each, he and Woz plugged in a keyboard, TV, and transformers and tested every board with an oscilloscope. They sold about 200 out of Jobs' garage before 1977 when they announced the Apple II.

The MITS Altair 8800 (1975) was featured on the January 1975 cover of *Popular Electronics* and sold as a hobbyist's kit for \$439. MITS sold more Altairs the first day than it expected to sell during the product's lifetime. The first computer to offer BASIC on an Intel 8080 microprocessor, the Altair had 64K of memory, and was programmed via toggle switches. Bill Gates and Paul Allen wrote a 4K BASIC interpreter for its 4K memory board; the signed and dated original is on display.

*Computer Space*, the first coin-operated video game, developed in 1971 by Atari founder Nolan Bushnell, adds a fantasy factor to the Garage. Inspired by *SpaceWar!*, a game available on university research computers, *Computer Space* was a bit too complicated for most consumers. A modest failure, the game sold only 2,000 copies, despite ads that hailed its "beautiful, space-age cabinet" and "the reality of controlling your own rocket ship in gravity-free outer space."

On the other hand, *Pong* (standing beside *Computer Space*) was a runaway hit. Introduced by Bushnell in 1972, this simple game ushered in the era of video arcades and home game machines. In 1974, a home version debuted, made possible by a drop in microchip prices.

### The '80s: PCs Go Commercial

More than any other personal computers, the IBM PC (1981) and Apple Macintosh (1984) transformed how organizations and people thought about and used computers. Each machine has its own recently enhanced vignette. The IBM display re-creates an early use of a Lotus 1-2-3 spreadsheet running on an IBM PC at the Hong Kong Jockey Club. It was used to track race-course statistics from more than 5,000 ticket windows across Hong Kong.

The vignette on the Macintosh features Granada High School in Livermore, Calif., where students used a Mac 512 running early *PageMaker* software to create their school newspaper. Both vignettes also include interactive stations where visitors can experiment with spreadsheets on a PC and create postcards on a Mac.

## Book Honors Wizards and Their Wonders

This fall, the Museum and the Association for Computing (ACM) will co-publish *Wizards and Their Wonders: Portraits of Computing*, a new book by Christopher Morgan. It features color portraits by famed photographer Louis Fabian Bachrach, with biographical sketches of 200-odd innovators representing America's central role in computing.

While unabashedly American in slant, the book does not gainsay the considerable contributions of international innovators like Charles Babbage and Alan Turing. We hope in the future to create a companion tribute to the many international computer innovators.

The Museum began by identifying winners of the National Medal of Technology and other prestigious awards. That group helped nominate others. The list grew from inventors to include entrepreneurs, policy-makers, commentators, venture capitalists and bankers.

Like almost no other industry, computing depends nearly as much on entrepreneurs and policy-makers as it does on inventors. The constant updating of software and hardware requires teams of people from many disciplines working in synergy. The inventors spur on the entrepreneurs, who feed their energies back to the inventors. America's post-World War II economy nourished an extraordinary confluence of inventors, entrepreneurs, visionary venture capitalists, and a society eager to embrace technology. The results were staggering. The IBM 360, the integrated circuit and the Internet are examples.

The *Wizards* list juxtaposes familiar names such as Bill Gates with others familiar only to "insiders" and students of computing. The book also honors "forerunners" such as John von Neumann and Grace Murray Hopper.

The book grew out of an exhibit called *Wizards and Their Wonders*, sponsored by The Computer Museum History Center and featuring one-of-a-kind computer artifacts and photographs of 60 inventors by Bachrach. The exhibit was unveiled in March 1997 in San Jose, Calif., in conjunction with the ACM97 Conference and Exposition on "The Next Fifty Years of Computing," a celebration of the ACM's 50th anniversary.

\*\*\*\*\*

The book is being published in conjunction with the Museum's exhibit *Wizards and Their Wonders*, scheduled to open on October 5 at the National Academy of Sciences, Washington, D.C., and at the Museum in November.

By Christopher Morgan. Morgan is president of Christopher Morgan Communications, a consultant to the ACM, and a TCM overseer.



Photograph: The Computer Museum Collection

This arresting photo graced *Computer Space's* advertising brochure in 1971.



The Hong Kong race track vignette's woodwork and walls were meticulously chipped and aged to look seedy.

# This Year's Computer Bowl Scores Many Important Firsts for the Museum

It was both a momentous night for the West Coast and a defining moment in the history of The Computer Bowl™ event, the Museum's major fundraiser for its educational programs.

On April 18, for the third consecutive year, the West Coast team beat the East Coast, with a final score of 230 to 140.

The Computer Bowl MVP Awards, sponsored and presented by Ziff-Davis, were won by two West Coast team players, Steve Kirsch of Infoseek and Steve McGeady of Intel, and East Coast player Sam Whitmore of Ziff-Davis.

At the same time, the Bowl rose to a new plateau for other reasons. Ziff-Davis was the 1997 Computer Bowl Presenter, along with the Museum. Just prior to the event, Ziff-Davis made a commitment to present the Bowl again in 1998 and placed its support behind the mission of The Computer Bowl. "Ziff-Davis looks forward to a long-term partnership with this important industry institution. We support the important educational work of The Computer Museum and encourage other leaders of the computing and Internet communities to participate in The Computer Bowl," said Eric Hippeau, CEO of Ziff-Davis.

Additionally, actor Robert Urich, star of ABC-TV's critically acclaimed series *Vital Signs*, served as host of the game. (He is also a principal of Computer Sentry Software, makers of computer security software.) Urich graciously added his celebrity to the game, which brought renewed interest in the Bowl. Urich has also agreed to host the 1998 Bowl.

Another first for the Bowl is the early selection of the 1998 West Coast Bowl team: Marc Andreessen, Netscape; Denise Caruso, *Technology & Media Newsletter*; Scott Cook, Intuit; Bill Krause, Storm Software; and Mike Slade, Starwave Corporation. The East Coast team will be selected soon.

This year's West Coast team included Captain Steve Kirsch; Steve McGeady; Nathan Myhrvold, Microsoft; Kim Polese,

Marimba; and Grant Saviers, Adaptec.

The 1997 East Coast team consisted of Captain Sam Whitmore; Chuck Digate, MathSoft; Frank Ingari, Shiva; Ilene H. Lang, AltaVista; and Steve Vana-Paxhia,

Inso. John Doerr of Kleiner Perkins Caufield & Byers, Mitchell Kertzman of Sybase and Eric Schmidt of Novell served as judges.

Reflecting on the West Coast's victory, Captain Steve Kirsch said, "After winning three straight, I think it's fair to call this a 'dynasty.' The East put up a good fight, but

ultimately they were no match for the West Coast brain power."

"The West Coast squad certainly rose to the occasion and, on that basis, deserves the victory," said East Coast Team Captain Sam Whitmore. "But I remain confident that the East is a superior team, just as it is a superior coast." The West Coast's victory brings that coast's lead to 3-0 in the second generation of Computer Bowl games and 6-3 overall since the first Bowl in 1988.

The Computer Bowl aired nationally in June, as a special edition of the award-winning public television show *Computer Chronicles*. The program is seen on 313 PBS stations and in 144 countries worldwide. The Bowl also aired on the nationwide cable network, Knowledge TV.

This year for the first time, the Bowl was broadcast live on the Web as it was played. People who had an Internet connection, 28.8Kbps modem, sound card, and speakers heard an audio webcast of the game by *PC Week* Radio.

The 1997 Computer Bowl was presented by Ziff-Davis and underwritten jointly by Bay Networks and Intel. Official sponsors include ACM, Adaptec, AltaVista, Computer Sentry Software, Coopers & Lybrand, LLP, Internet Shopping Network, Kleiner Perkins Caufield & Byers, MathSoft, Shiva, Silicon Valley Bank and Stratus. *Fortune* magazine is the lead media sponsor for the Bowl. Over nine years, The Computer Bowl has raised \$3 million in donations and in-kind support for The Computer Museum's educational programs.



Photograph: Joe Czop

**Bowl Celebrity Host Robert Urich (third from the left), congratulates the West Coast on their victory. Team from the left: Steve McGeady, Nathan Myhrvold, Team Captain Steve Kirsch, Kim Polese, and Grant Saviers.**

## Clubhouse Expands (continued from p.3)

Beyond Black Boxes and Clubhouse-to-Career will be rolled out to all Clubhouse sites after a pilot period. The Museum has also developed an Operations Manual, an Educational Activities Guide, a Mentor Handbook, and other materials for community centers, museums, schools, libraries, and other community-based organizations interested in being Clubhouse host sites. An online network for members to collaborate on design activities, share computer-based projects, and exchange information over the Internet is also being developed.

### A Growing Community

The growth of the Clubhouse network has provided opportunities for several members of the Clubhouse community. Marlon Orozco, a former Clubhouse member and mentor, now manages the Museum's Clubhouse, while Mike Lee, also a former member and mentor, now has a job at the USES satellite in addition to managing the Museum's Clubhouse on Saturday. Both Lisa Evans and Amin Abdullah began as mentors. Lisa now manages the USES Clubhouse and Amin coordinates the Beyond Black Boxes project at the Patriots' Trail Girl Scout Council.

The Clubhouse was "a real turning point" for Ingeborg Endter, who is entering graduate school at the MIT Media Lab this fall. "My mentoring experience helped me decide to pursue a Master's and gave me the chutzpah to apply to MIT," she says. Velda Lashley, formerly a Bank-Boston trades services rep, took advantage of her bank's offer to support her mentoring at the Clubhouse, and found it so rewarding that she now has a new job—as Clubhouse Coordinator mentoring and providing crucial administrative support.

### Support

The Computer Clubhouse is supported entirely by contributions from corporations, foundations, government agencies, and individuals. Major supporters in the past year include the NYNEX Foundation, State Street Foundation, YouthALIVE! (a program of the Dewitt Wallace-Reader's Digest Fund), the Massachusetts Cultural Council, and the Reebok Foundation. For more information and to see examples of Clubhouse kids' work, visit the Clubhouse's website ([www.tcm.org/clubhouse](http://www.tcm.org/clubhouse)) or contact Gail Breslow, Computer Clubhouse director, at (617) 426-2800 x421 or e-mail ([breslow@tcm.org](mailto:breslow@tcm.org)).

By Gail Breslow. Breslow is director of the Computer Clubhouse.

## Education Program Center Addresses Teacher Needs

Through a major contribution from Digital Equipment Corporation, a brand-new Education Program Center (EPC) has been established to further the Museum's mission to educate all ages about computer technology.

The EPC addresses two issues of national concern: educational reform and gender equity. Large equipment donations to schools as well as initiatives such as Net-Day (a nationwide grassroots effort by states to bring the Internet to schools) increasingly challenge teachers to integrate technology into their curricula. The EPC will teach educators new technologies to take back to their classrooms.

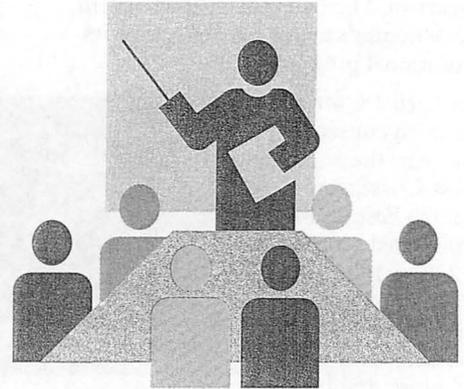
Gender-equity workshops will help educators engage girls in technology at an early age. The EPC will also challenge teachers to re-examine gender stereotypes to ensure that computing is

no longer viewed by children as a male-centric pursuit.

Digital Equipment Corporation, in its continuing partnership with the Museum, has awarded \$5,000 in cash and a \$79,000 equipment grant to the EPC. Jane Hamel, corporate contributions manager at Digital, says, "As a technology leader, we believe teachers must have the expertise to help students prepare for the technological challenges of the 21st century. We are pleased to work with the Museum to ensure this happens."

Other contributors to the 1,200-square-foot facility include the New England Hi-Tech Charity Foundation, the Boston Computer Foundation, and The Children's Museum.

The official opening of the Education Program Center is scheduled for September 18, 1997.



## Up and Running

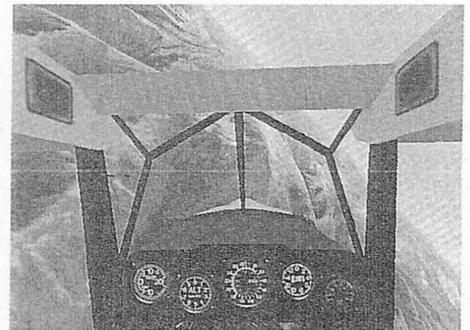
### New Flight Simulator Mimics the Thrills of a Stunt Pilot

Museum visitors can now pilot a stunt aircraft over photo-realistic terrain by using a state-of-the-art flight simulator. The award-winning simulator, custom-designed for the Museum by Looking Glass Technologies, offers a demo of flight fundamentals plus the opportunity to fly solo. Using a joystick and keyboard, visitors learn how a plane moves and how to control it, executing simple aerobatic maneuvers such as tailslides, barrel rolls, and flips, as well as landing without crashing.

The keyboard controls the view (from inside or outside the aircraft) and the throttle, brakes, rudders, ailerons and elevators. The joystick lifts and lowers the

aircraft and executes rolls. Dials on the cockpit's console show the changing air-speed, altitude and engine rpms. Stunning graphics and 3D photorealism recreate a sensation of flight highly accurate for a personal computer, says Mike Goulian, captain of the U.S. National Aerobatic team. "The exhibit duplicates the actual aerobatic sequences I perform at air shows."

"Most flight simulators are for fighter planes," says Alex Nolan, 11, of Dover, Mass. "This one is non-violent, perfect for any kid. It gives you a feeling of how to fly and what to do."



Photograph: Courtesy Looking Glass Technologies, Inc.

This screen shot shows the dials on the cockpit's control panel.

## History Center Supporters

### \$100,000 and above

Gordon and Gwen Bell  
Leonard J. Shustek

### \$10,000 and above

Gray Cary Ware Freidenrich  
David L. House  
John R. Mashey and  
Angela M. Hey  
The Intel Museum  
Network General Corporation  
Sun Microsystems  
John and Kate Wakerly  
Curt Widdoes

### \$5,000 and above

Anonymous  
Compaq Computer Corporation  
John and Patricia Grillos  
Andrew and Eve Grove  
Steven Todd and  
Michele Kirsch  
Richard Lowenthal  
Daniel and Karen Lynch  
Gordon and Betty Moore  
Oracle Corporation  
Kanwal and Ann Rekhi

### \$1,000 and above

Allan and Katie Alcorn  
Dennis Allison  
John and Sheila Banning  
Eric and Illeana Benhamou  
Steve Blank and Alison Elliott  
Gary Boone, MicroMethods  
Paul L. Borrill  
Computer Science Dept.,  
Courant Institute, NYU  
William H. Davidow  
Disk/Trend, Inc.  
El Dorado Ventures  
Bob O. and Maria B. Evans  
Roger C. Ferguson  
Barry James Folsom and  
Tracey Thomas Stewart  
Marc A. Friend

Robert Garner  
Jean-Louis and Brigitte Gasee  
David B. Gustavson  
Hewlett-Packard,  
Optoelectronics Division  
Peter Hirshberg  
Alan Kay and Bonnie MacBird  
Harold R. Kellman  
Sam Hearn Lee  
George A. Michael  
Isaac and Ronee Nassi  
James and Stephanie Nisbet  
Landon Curt Noll  
ParcPlace-Digitalk  
David and Sandra Perloff  
Bernard and Anne Bertaud Peuto  
Christopher Poda  
William and Rochelle Pratt

David J. Rossetti  
Jon Rubinstein  
Paul Saffo  
Charles Simonyi  
Walstein Bennett Smith III  
Jay M. and Arlene B.  
Tenenbaum  
Nick and Sue Tredennick  
Warthman Associates  
WebTV Networks, Inc.  
Eliot and Beth Wegbreit  
Ann Winblad  
Pierluigi Zappacosta and  
Enrica D'Etore

**Program Support**

**\$250,000 and above**  
Digital Equipment Corporation

**\$50,000 and above**  
Anonymous  
Massachusetts Cultural Council  
MCI Foundation  
Reebok Foundation  
Ziff-Davis Publishing Company

**\$10,000 and above**  
ACM  
Adaptec  
Anna B. Stearns Foundation  
Bay Networks  
Computerworld

Continental Cablevision  
Scott Cook and Signe Ostby  
Coopers & Lybrand, LLP  
Gordon Eubanks  
Gardner Hendrie and  
Karen Johansen  
Intel Corporation  
The Kapur Family Foundation  
Kensington Microwave Limited  
Kleiner Perkins Caufield &  
Byers

MathSoft  
Medtronic Foundation  
Microsoft Corporation  
The Monster Board  
Network General Corporation  
NYNEX Foundation (NYNEX)  
Shiva Corporation  
Silicon Valley Bank  
Michael Simmons  
State Street Foundation  
Stratus Computer  
SunExpress  
Symantec Corporation  
Thomson Financial Services  
Youth ALIVE!  
ZOOM Telephonics

**\$5,000 and above**  
American Express Company  
Apple Computer  
The Boston Computer  
Foundation  
Boston Globe Foundation  
Cunningham Communication  
Hewlett-Packard Company  
Christine Hughes  
IBM Corporation  
Mitchell and Julie Kertzman  
Motorola Foundation  
NASDAQ  
Sematech  
The Weber Group

**\$1,000 and above**  
Amdahl Corporation  
America Online  
Andersen Consulting  
The George and Frances  
Armour Foundation  
Asset Management Associates  
BankBoston  
BBN Corporation  
Owen Brown  
Business Design Associates  
Choate, Hall & Stewart  
C.S. Draper Laboratory  
Charles River Ventures  
CyberCash  
Edelman PR Worldwide  
Fidelity Systems Company  
Forrester Research  
Golin Harris Technologies  
The Grey Eagles  
Winston and Sarah Hindle  
Infoseek  
Inso Corporation  
Interval Research Corporation  
Keyfile Corporation  
LAN Times  
Lotus Development Corporation  
Lucash, Gesmer & Updegrove  
The MathWorks  
McDougall Creative  
Robert and Robyn Metcalfe  
Miller Shandwick Technologies  
Mitsubishi Electric-ITA  
David and Pat Collins Nelson

Novell  
Price Waterhouse, LLP  
Quantum Corporation  
Rocket Science Games  
Ropes & Gray  
Harry and Carol Saal  
Secure Computing Corporation  
SOFTBANK  
Spectron Microsystems  
Stride Rite Charitable  
Foundation  
Sun Microsystems Laboratories  
Testa, Hurwitz & Thibault, LLP  
Xerox Corporation  
XRE Corporation  
Yoyodyne Entertainment

**Corporate Members**

**\$10,000 and above**  
Digital Equipment Corporation  
IEEE Computer Society  
Medical Information  
Technology  
Microsoft Corporation  
Sun Microsystems Laboratories  
Unisys Corporation

**\$5,000 and above**  
Adaptec  
Adobe Systems  
Bay Networks  
Compaq Computer Corporation  
Data General  
International Data Group  
Lotus Development Corporation  
The MathWorks  
National Semiconductor  
NYNEX Corporation  
Stratus Computer  
Symantec Corporation  
The Weber Group

**\$3,000 and above**  
Addison-Wesley Longman  
Advanced Micro Devices  
Alex. Brown & Sons  
American Power Conversion  
Banyan Systems  
Boston Edison Company  
Canadian National Railways  
Coopers & Lybrand, LLP  
C.S. Draper Laboratory  
Gillette Company  
Informix Software  
Inso Corporation  
MCI Telecommunications  
NEC Technologies  
Parametric Technology  
Corporation  
Power Computing  
Raytheon Company  
The Research Board  
Rockwell  
Ropes & Gray  
Thomson Financial Services  
ZOOM Telephonics

**\$1,000 and above**  
Advanced Technology Ventures  
Analog Devices  
Andersen Consulting  
Applied Technology Investors  
Aspen Technology  
Atria Software  
Automatic Data Processing  
BankBoston  
BBN Corporation  
Cabot Corporation  
CacheLink  
Charles River Ventures  
Choate, Hall & Stewart  
Chubb & Son  
Computervision  
CSC Index  
Cunningham Communication  
Deloitte & Touche LLP  
DialLogos  
Dow Chemical  
Ernst & Young  
Fleet Bank  
Global Competitiveness  
Corporation  
Greylock Management  
Corporation

GTE Laboratories  
Harcourt General Charitable  
Foundation  
Hewlett-Packard Medical  
Products  
Hewlett-Packard  
Hill & Barlow  
Intermetrics  
KPMG Peat Marwick LLP  
Loomis, Sayles & Company, L.P.  
MaMaMedia  
MAXIS  
Mazonson  
McGraw-Hill Companies  
McKinsey & Company  
Mercury Computer Systems  
Microcom  
Miller Shandwick Technologies  
The Millipore Foundation  
Mitsubishi Electric-ITA  
Motorola  
Network General  
The New England  
Nintendo of America  
Oak Industries  
Open Group  
Parlance Corporation  
Pegasystems  
Powersoft Corporation  
Price Waterhouse, LLP  
Proteon  
Quantum Corporation  
Rourke & Company  
Silicon Valley Bank  
Shiva Corporation  
Sprint Business  
State Street Bank  
SWIFT  
TASC  
Teradyne  
Wolfram Research  
Work/Family Directions  
Xerox Corporation  
XRE Corporation

**The Friends of the Museum**

**\$5,000 and above**  
Anonymous  
The Boston Foundation  
Richard and Nonnie Burnes  
Bob Davoli and  
Eileen McDonagh  
Gardner Hendrie and  
Karen Johansen  
The Kapur Family Foundation  
Mitchell and Julie Kertzman  
David and Pat Collins Nelson  
A. Neil Pappalardo  
Michael Simmons

**\$2,500 and above**  
Richard and Judy Anders  
Gordon and Gwen Bell  
Edward Belove and  
Laura Roberts  
Erich and Renee Bloch  
Richard and Virginia Case  
George and Ann Colony  
Christine Hughes  
John R. Mashey and  
Angela M. Hey  
Benjamin and Maureen Robelen  
Howard Salwen and  
Sheryl Marshall  
Dan Schwinn

**\$1,000 and above**  
Sam and Joice Albert  
Paul G. Allen Charitable  
Foundation  
Anonymous  
Charles and Constance Bachman  
Gary Beach  
Jeff Braun  
Rod and Cam Canion  
Richard Carpenter  
Arthur and Virginia Carr  
Clemmie and James Cash  
Vinton and Sigrid Cerf  
Steve and Maureen Cheheyli  
Stephen and Lois Coit  
Howard E. Cox, Jr.  
Stephen Crosby and  
Helen Strieder

John and Diddy Cullinane  
David Cutler and  
Deborah Girdler  
Jean and Sylvia de Valpine  
Edson and Eileen deCastro  
Nick and Margaret DeWolf  
Gary and Joan Eichhorn  
Robert and Ann Everett  
William Foster  
J. Thomas Franklin and  
Leonie Gordon  
Robert Frankston and  
Eleanor Elkin  
Samuel and Carol Fuller  
Gideon Gartner  
Aidan and Carol Hanover  
Roger and Marny Heinen  
Max and Jo Hopper  
Charles House  
David L. House  
Theodore Johnson  
Steven Todd and Michele Kirsch  
John and Linda Loewenberg  
John and Catherine Mandile  
Frank McCourt  
Michael Moody  
Laura Barker and Ken Morse  
Isaac and Ronee Nassi  
Lee J. Neal  
Anthony and Kitty Pell  
Nick and Nancy Pettinella  
Paul R. Pierce  
David S. Rose  
Edward A. Schwartz  
William and Judy Fowler Seifert  
Hal B. Shear  
John F. Shoch  
Lee and Bob Sproull  
Max and Nancy Steinmann  
Joel D. Sugg  
James Swartz  
Dorothy A. Terrell  
Allan and Nadine Wallack  
Larry and Dawn Weber  
William Wulf and Anita Jones  
Robert Ziff  
Charles and Shirley Zrakat

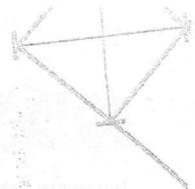
**Annual Donors**

**\$500 and above**  
David L. Anderson  
Steve F. Barnebey  
Belmont Public Library  
Boston Gas Company  
Boyden Library  
Brockton Public Library  
Brookline Public Library  
Burlington Public Library  
John G. Carberry  
Walter M. Carlson  
CMP Media  
Cohasset Public Library  
Randall Davis  
Donald and Edith Daykin  
Lucien and Catherine Dimino  
Andy and Linda Egendorf  
Andrew and Sarah Hathaway Feit  
The Foxboro Company  
Goodnow Public Library  
Haverhill Public Library  
Hingham Public Library  
Holliston Public Library  
Albert A. Holman, III  
Ernest and Elizabeth Jenness  
Peter and Caroline Kastner  
John and Marilyn Keane  
Kelley Library  
J. S. Kilby  
Michael and Katharine Kolowich  
Richard Lary  
John N. Little  
Lucius Beebe Memorial Library  
Lynn Public Library  
Barry W. Margolin  
MENTOR Clinical Care  
Moses Greeley Parker Memorial  
Library  
North Shore Community College  
Gary M. Olson  
Katherine C. Patterson  
James N. Porter  
Reading Public Library  
Richards Memorial Library  
Robert Treat Paine Association

Jean E. Sammet  
Ralph Savir  
Benn L. Schreiber  
Somerville Public Library  
Oliver and Harriet Strimpel  
Taunton Public Library  
Thayer Public Library  
Waltham Public Library  
Wayland Free Public Library  
Wellesley Free Library  
Winchester Public Library

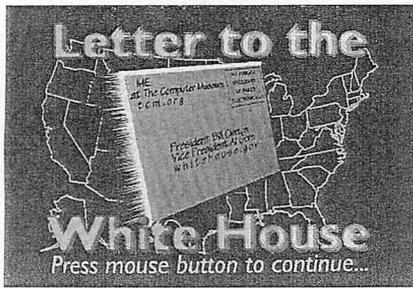
**\$250 and above**  
Frances E. Allen  
Bellingham Public Library  
Leo L. Beranek  
Brown University  
Cambridge Mental Health  
Association  
Howard and Holley Cannon  
William and Vicki Christensen  
Lloyd and Eleanor Dickman  
Eastham Public Library  
Frederick A. Ebeling  
William T. Elliott  
John H. Esbin  
Bob and Maria Evans  
Donald Gaubatz and  
Linda Kroll  
Joan Geoghegan  
Robert and Deanne Glorioso  
Stewart and Constance Greenfield  
Foundation

Theodore A. Hess, Jr.  
Robert B. Hoffman  
David and Jane Hubbard  
Gail A. Jennes  
Katharine and Bill Jose  
Ann Karpick  
Richard H. King  
Arnold Kraft  
Mike and Kathleen LeRoy  
Henry M. Levy  
Jon and Judith Liebman  
John and Elizabeth Little  
Carl and Wilma Machover  
Melvin J. Mason, Jr.  
Tron McConnell  
Medford Family Network  
Todd Medlock  
Charles and Kathy Minter  
Robert M. Morrill  
Joseph C. Morris  
Arthur H. Nelson  
Bernard J. Nordmann  
Northbridge PTA  
Ocean Software  
Anthony and Marilyn Oettinger  
Paul Pangaro  
James R. Payne  
Robert W. Puffer  
Mr. Duane A. Rice  
Douglas and Pat Ross  
Michael J. Samek  
Sarah Schiermeyer  
Michael L. Seman  
W. Lee Shevel  
Robert and Jean Spencer  
Sprint Foundation  
Robert and Diane Stewart  
Suffolk University Law School  
Atsuyoshi Takayama  
Michael and Marcella Thompson  
Warren and Jane Tisdale  
Frederick and Nomi Trapnell  
Robert Trudel and Thanh Vu  
Waltham Parks & Recreation  
Department  
Willis H. Ware  
Michael and Joann Witman



August 1-September 1, Daily

M-Free



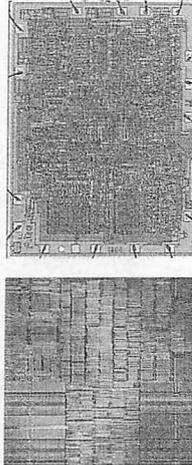
**The Fun's Inside: Special Missions and Guided Activities**

Different themes for self-guided tours provide an amazing and often surprising variety of ways to learn and have fun with computers. The "Let's Take a Trip" mission guides guests to all corners of the Museum's galleries to visit Paris and the Louvre on the Internet, navigate through virtual worlds, explore the inside of the human body, and lead a bicycle expedition across Africa. Choose "Let's Laugh" for exhibits that tickle your funny bone and "Let's Talk" to chat with computers, other guests, and people around the world on the Internet.

**The Computer Museum Store**

M-Discounts

To celebrate the 25th anniversary of the invention of the microprocessor, Micro-Design Resources and The Computer Museum History Center collaborated to create the "Microprocessor Evolution" poster. Beginning with the Intel 4004 and ending with the IBM P2SC, the poster shows 150 chips, enlarged to four times their actual size. Chips are connected to their upward-compatible descendants; others are connected to chips that share architectural relations. This unique, four-color



The "Microprocessor Evolution" poster chronicles the development of the microprocessor from its invention in 1971 to the present. At top: Intel 4004 (1971, 2,300 transistors) and IBM P2SC (1996, 15,000,000 transistors).

poster is available from The Computer Museum Store and WebStore.

**The Computer Museum Store**

phone: (617) 426-2800 x307  
fax: (617) 426-2943

**The Computer Museum WebStore**

www.tcm.org/store/  
Open 24 hours a day, every day.

**Attention MacWorld Registrants!**

Wednesday, August 6-Friday, August 8

**MacWorld Expo**

The Computer Museum offers Internet education and presentations in MacWorld's Net Zone at the Bayside Expo Center in Boston. Staff and volunteers offer 30-minute presentations exploring "What's Hot," "Upgrades & Support: A Tech's View," "Web Marketing and Advertising," and "Personalization & Customization." All presentations are free with admission to the Expo. The Computer Museum booth also features several interactive exhibits and our most popular humor items, books, shirts, and custom buttons from the Museum Store.

Visit ([www.tcm.org](http://www.tcm.org)) for interactive activities, historic timeline and more

**M E M B E R S H I P**

Members get free admission for one year; The Computer Museum *NEWS*, a newsletter of Museum activities; the *Annual* report; invitations to exhibit previews and members-only events; advance notice of exhibitions and lectures; and a 10% discount on purchases over \$5 in the Museum Store. For more information, call the membership department at (617) 426-2800 x432 or e-mail: [members@tcm.org](mailto:members@tcm.org).

**Individual Memberships**

- \$35 One-Year
- \$60 Two-Year
- \$25 Student or Senior

**Family Memberships**

- \$50 One-Year admit 4
- \$75 One-Year admit 6
- \$90 Two-Year admit 4
- Number of Family Members

I would like to make a tax-deductible contribution of \$ \_\_\_\_\_  
My check, payable to The Computer Museum, is enclosed.

Or charge to my:  Mastercard  Visa  American Express

Card #: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

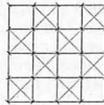
Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

E-mail: \_\_\_\_\_

Join or renew via e-mail: [members@tcm.org](mailto:members@tcm.org)



**The Computer Museum**

300 Congress Street  
Boston, MA 02210  
(617) 426-2800  
[computer\\_info@tcm.org](mailto:computer_info@tcm.org)

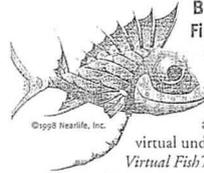
Address Correction Requested

Nonprofit Org.  
U.S. Postage  
PAID  
Boston, MA  
Permit No.55897



the  
computer  
museum

# The Giant Virtual FishTank



Be One of the First to Create a Virtual Fish!

On June 13, the Museum unveils a 2,200-square-foot virtual undersea world, *The Virtual FishTank*™. In the exhibit, visitors can create and interact with their own virtual fish to gain new insights into how complex living systems work. The project represents the most complicated software development of an exhibit that the Museum has ever undertaken.

The *FishTank* offers firsthand experiences in creating artificial life forms and reveals how simple behavioral rules can produce complex, often surprising, results. "One of the best ways to learn is by building things," says Mitchel Resnick, professor of research in education at the MIT Media Lab and a *FishTank* project co-leader along with the Museum's executive director, Oliver Strimpel. "In this case, you build behaviors for your own artificial fish, and then observe the patterns that emerge as your fish interacts with others in the giant *FishTank*. It's an engaging experience—and also a great learning experience," says Resnick.

Twelve large projection screens form windows into the 400-square-foot central tank—a fanciful, watery world populated with over 100 brightly colored, computer-generated fish. At "Build Your Own Fish" stations, visitors design their fish, choosing behaviors such as appetite for food and responsiveness to temperature, human beings, and other fish.

## THE VIRTUAL FISHTANK MEMBERS-ONLY PARTY

FRIDAY, JUNE 19, 6:00-8:00PM  
TO RSVP, CALL (617) 426-2800 x660



These choices affect the shape and color of various body parts. When visitors are satisfied with their fish, they launch their creations into the tank, and then experience how the few simple rules they used to design their individual fish lead to complex behaviors and patterns for the entire ecosystem.

By cranking a wheel, visitors also feed the fish, while sensors enable the fish to react to human movement. At "Schooling" stations, visitors interact with entire groups, including predator, friendly and deep-sea fish. While a fish school may seem to have a leader, local interactions among all the individual fish actually determine their behavior. "Diving Deeper" stations reveal that this phenomenon applies not only to fish, but also to other systems such as birds, insect colonies, highway traffic, and market economies.

"*The Virtual FishTank* presents important new ideas about the way the world works, and how we think about it," says Mitchell Kapor, founder of Lotus Development Corporation and president, Kapor Enterprises, Inc. "It is an unforgettable experience to enter and interact with such a graphically rich, sophisticated virtual world."

The exhibit is a collaboration with the MIT Media Lab and Nearlife, Inc. The Museum is building this compelling, simulated aquatic

environment, combining the latest techniques in 3-D computer graphics and real-time interactive character animation. Combining the Museum's expertise in creating large-scale, immersive educational experiences and the Media Lab's knowledge of artificial life and decentralized systems, the *FishTank* has been germinating for five years. But recent advances in software technology, such as Nearlife's Directable Characters,™ now enable the virtual fish to interact with visitors and other fish in real time. Nearlife, an MIT Media Lab spin-off, is designing and implementing the exhibit's many complex parts.

The \$1 million exhibition is being developed with a \$600,000 grant from the National Science Foundation—the largest ever to the Museum—and funding from the Kapor Family Foundation, Sun Microsystems, anonymous gifts and other support.

A traveling version of the exhibit is also planned. A dozen science centers and aquaria across the country have expressed interest, including the Franklin Institute in Philadelphia and the Exploratorium in San Francisco.

©1998 Nearlife, Inc. Rendered using Lightscape from Discreet Logic.



Photograph: FAXFOTO

## IN MEMORIAM

We are sorry to report that former Computer Museum Chairman of the Board Charles A. Zraket died on December 3, 1997, in Boston. He was 73.

Zraket was a former Trustee, President and CEO of The MITRE Corporation, where his work involved systems research and the application of computing to air defense and traffic control, space control, health care delivery and educational technology systems. He advised President Reagan on defense and Pope John Paul II as a member of the Pontifical Science Academy, and was awarded the Department of Defense Medal for Distinguished Public Service in 1990. Zraket was also a Scholar-in-Residence at the Center for Science and International Affairs at Harvard's Kennedy School of Government.

"Charlie was deeply devoted to the Museum," says Oliver Strimpel, the Museum's executive director. As the fourth Chairman, serving from 1993 through 1996, Zraket played a key role in the development and success of the Museum's educational programs and exhibits.

Zraket once explained his commitment to the Museum in this way: "In the early 1950s, as an MIT graduate student, I worked with Jay Forrester and Bob Everett on the Whirlwind. (One of the Museum's most important artifacts, part of the Whirlwind is on display in *People and Computers*.) With barely two dozen computers in the world then, I was excited about the potential of such a tool," Zraket said. "I want everyone to feel this way about computers. It is deeply satisfying to use my 40 years' experience to help the Museum realize its educational mission."

Zraket's wife, Shirley, and his family generously asked that gifts in his memory be sent to the Museum. As a result, the Museum has been the beneficiary of numerous contributions (listed on our Salute to New Supporters page).

"It is a lovely tribute to Charlie and his abiding commitment to the Museum," says Strimpel.



Photograph: FAXFOTO

## New Gallery Celebrates Computing's Innovators

The Museum in November opened *Wizards and Their Wonders: Portraits in Computing*, a first-ever chronicle of the people driving the explosive growth of the computer industry. The exhibit consists of intimate photographs of 200 industry visionaries coupled with informative profiles of their backgrounds and achievements. Sparking enthusiastic reactions from both visitors and the press, *Wizards* has been extended beyond May 31 for another six-month run.

Featuring specially commissioned color portraits by noted photographer Louis Fabian Bachrach III, the exhibit, which was underwritten by Goldman, Sachs & Co., reveals the human faces behind many of the inventions defining the second half of the 20th century—from the mouse and the microprocessor to applications software and the Internet. With the exception of a small, key group of "fore-runners," the exhibit celebrates living innovators. The *Wizards* selection panel first identified winners of the National Medal of Technology and other industry awards. This group then nominated others, and so the list expanded.

The Museum collaborated with the Association for Computing Machinery (ACM) on the exhibit's companion volume, written by Christopher Morgan. "Both the book and exhibit capture a revolution in progress," says Gwen Bell, the Museum's founding president. "We seized this opportunity to stop time and create a legacy for the future—a core part of the Museum's mission."

The brainchild of Bell and Bachrach, *Wizards* grew out of a smaller portrait exhibit sponsored by the Museum's History Center in conjunction with the ACM's 50th anniversary in March 1997. Selected portraits were also on display at the National Academy of Engineering in Washington, D.C., prior to the full opening in Boston.

The exhibit displays several of the pioneers' inventions alongside their portraits. These

### TO REACH US

GENERAL INFORMATION	(617) 423-6758
GROUP VISITS	1-800-370-CHIP
MUSEUM OFFICES	(617) 426-2800
THE COMPUTER BOWL®	x399
THE COMPUTER CLUBHOUSE	x347
FUNCTIONS	x340
MEMBERSHIP	x376
MUSEUM STORE	x307
PUBLIC RELATIONS	x341
VOLUNTEER PROGRAM	x433
MUSEUM FAX	(617) 426-2943
HISTORY CENTER OFFICES	(650) 604-2575
COLLECTION	(650) 604-2578
HISTORY CENTER FAX	(650) 604-2594

For Museum staff, email: [lastname@tcm.org](mailto:lastname@tcm.org). Via World Wide Web: [www.tcm.org](http://www.tcm.org).

**Summer hours:** Open daily, 10am-6pm, through Labor Day. **Winter Hours:** Open Tuesday-Sunday, 10am-5pm. Closed Mondays, except Boston school holidays and vacations. Closed Thanksgiving, Christmas, and New Year's Day. **Admission:** Adults \$7. Seniors, students, and children \$5. Half price Sunday 3-5pm. Free to Museum members and children two and under.



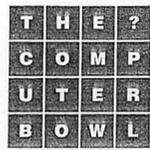
## The New Age of Learning Begins at the Computer Museum Camp

Whether it's for your own children or the children of your employees, there's no better way to inspire and educate kids, ages 8 to 15, about technology than The Computer Museum Camp. With 170 hands-on exhibits in eight galleries and special access to the latest high-end technology, the Museum provides a compelling complement to traditional educational efforts. This summer's computer playground expands to include *The Virtual FishTank*, where campers will design and launch their own fish, then watch their interactions in a giant central tank. Campers will also learn how to create their own Web pages and explore activities in robotics, simulations, graphics and animation. Off-site visits to nearby Cyber District companies offer a firsthand look at technology at work. Three blocks from South Station on the Red Line, the Museum is well located for easy drop-off and pick-up for working parents.

**Five-day camp sessions:** July 13, July 20 and August 3.  
**Activities:** 9:00 a.m. - 4:30 p.m.  
**Cost:** \$250 per camper. Computer Museum Family Members get a \$25 discount. Make a difference in a child's life by offering camp scholarships for underserved youth. To register, call Carole Chase at (617) 426-2800 x433 or e-mail [chase@tcm.org](mailto:chase@tcm.org).



## Computer Bowl



On April 24, ten titans of technology from the East and West Coasts compete for the 10th Annual Computer Bowl®, a fundraiser for the Museum's education and

preservation programs. Facing off in Boston for the first time since 1994, both teams of industry luminaries battle for "cyber-supremacy" in a computer trivia contest. This year's game takes place at Boston's Park Plaza "Castle," with a live satellite link to the audience in Silicon Valley. Actor Robert Ulrich is scheduled to host his second Computer Bowl, which features an "All-Star Pre-Game Show" and an auction of incredible items. PBS's *Computer Chronicles* broadcasts the Bowl the weeks of May 5 and May 12.

For those who follow the bicoastal rivalry, the total of past wins and losses stacks up this way: West 6; East 3. In the next issue, we'll let you know this year's winner and lots more!

For more information, call (617) 426-2800 x399. Also, the Bowl website ([www.computerbowl.org](http://www.computerbowl.org)) has complete information, games, and Bowl history.

## Support Bachman Fights AIDS

With an \$80,000 grant over two years from Mellon Trust, the Museum is helping Boston Public School teachers learn how to use the Internet in meaningful ways in their classrooms. "Educating with the Internet" workshops are geared to teachers in 19 public schools in Boston's Enhanced Enterprise Community (EEC), a technologically underserved area. The workshops, held in the Museum's Education Program Center, put the newest high-speed, multimedia technology at each teacher's fingertips.

"We are delighted to support this initiative," says Joanne Y. Jaxtmer, vice president and director of corporate affairs at Mellon Trust in Boston. "It gives us the opportunity to join forces with the many educators who work so hard to prepare our young people for the future."

The Education Program Center is available to educator groups, businesses and companies, seven days a week. For information, please contact Carole Chase (617) 426-2800 x433/ e-mail [chase@tcm.org](mailto:chase@tcm.org).

## HISTORY CENTER DONORS

**Capital Members:** Gordon and Gwen Bell, John R. Mashey & Angela M. Hey, Len Shustek, Curt Widdoes

**Lead Founding Corporate Members:** Amdahl Corporation, Hewlett-Packard Company Foundation

**Founding Corporate Members:** Real 3D, Network General, Oracle Corporation

**Lead Founding Members:** Gene M. Amdahl, Edward Belove and Laura Roberts, Richard and Nonnie Burnes, Disk/Trend, Inc., John and Ann Doerr, Federico and Elvia Faggini, Ed Frank, Sarah Ratchye & Family, John and Patricia Riggs, Jim Guzy, Elaine & Eric Hahn, Interval Research Corporation, Mitchell Kapor, Harold R. Kellman, Vinod and Neeru Khosla, Steven and Michele Kirsch Fund, Bill and Gay Krause, James and Stephanie Nisbet, Max Palevsky, Bernard L. Peuto, Arthur Rock, Harry and Carol Saal, Grant and Dorrit Saviers, Jay M. and Arlene B. Tennenbaum, Ann Winblad, Pierluigi Zappacosta & Enrica D'Ettoire

**Founding Members:** Allan and Katie Alcorn, Fran Allen, ASCII Corporation, Dennis and Janet Austin, Dave and Madalyn Babcock, Tim Bejarin, BancAmerica Robertson Stephens, John and Sheila Banning, Charlie Bass, Paul Bergavain, Eric and Renee Bloch, Barry Boehm, Gary Boone, MicroMethods, Michael and Leslie Braun, Jack Burness, Dennis Lee Carter, Ned Chapin, Computer Science Department, University of Minnesota, George C. Comstock, Steve Crocker, Cunningham Communication, Inc., Peter and Dorothy Denning, Lloyd Dickman, Whitfield Diffie & Mary Lynn Fischer, Daniel Drake, Donna Dubinsky, Gordon Eubanks, Jr., Irvin Federman, Roger C. Ferguson, Katrina and Terry Garnett, Donald A. Gaubatz, Layne Gray, John C. Green, Jr., Forrest E. Gunnison, David B. Gustavson, John and Andrea Hennessy, Andy Hertzfeld, Steven E. Hill, Colin Hunter & Alexia Gilmore, William and Pamela Johnson, Robert E. Kahn, Don and Jill Knuth, Mr. and Mrs. David A. Lane, Richard and Ellen Lary, Gary and Laura Lauder, Arthur E. Lemay & Joan Rogers, Ted G. Lewis, Carl D. Lowenstein, Richard Lowenthal, Tom Lyon & JoAnn Kahn, Robert and Katherine Maxfield, Patrick and Lore McGovern, Carver Mead & Barbara Smith, Glen and Cathy Miranker, Tim Mitchell, The Morgridge Foundation, Lee J. Neal, Landon Curt Noll, The Noyce Foundation, Susan Nycum & George Bosworth, Mike Park, David and Linda Patterson, Christopher Poda, William and Rochelle Pratt, Rex Rice, David J. Rossetti, Jon Rubinstein, Allen Samuels, John and Christine Sanguinetti, Morey and Barbara Schapira, John Sewell, Michael J. Skok, Alvy Ray Smith, Robert and Verna Spinrad, George Spix, Bob Supnik, Steve Teicher & Del Thordike, Larry Tesler, Mochio Umeda, William M. VanCleave, Lowell Wood, William Wulf and Anita Jones

**Supporters:** Les Earnest, Douglas Fairbairn, Ed Feigenbaum & Penny Nil, Joseph Paul Fredrick, Amos and Marilyn Goldhaber, Kevin Hogan, Gail Jennes, Ted Kaeher, Aaron Marcus, Michael Pique, Roy Russo, Tom Stepleton, Duane K. Wise

## A SALUTE TO OUR NEW SUPPORTERS

### PROGRAM SUPPORT

**\$100,000 and above:** National Science Foundation, A. Neil Pappalardo

**\$50,000 and above:** Goldman, Sachs & Company, Kapor Family Foundation, Massachusetts Cultural Council, Mellon Trust, Sun Microsystems

**\$5,000 and above:** Andersen Consulting, Hybridon, Symantec Corporation

### CORPORATE MEMBERS

**\$10,000 and above:** Adaptec, IEEE Computer Society, Medical Information Technology, Sun Microsystems Laboratories, The Weber Group

**\$5,000 and above:** Adobe Systems, Bell Atlantic, CMP Media, MathSoft, The MathWorks, Mellon Trust, Symantec Corporation

**\$3,000 and above:** Advanced Micro Devices, Boston Edison Company, Coopers & Lybrand, LLP\*, MCI Telecommunications, Parametric Technology Corporation, Pegasystems, Raytheon Company, The Research Board, Ropes & Gray, Thomson Financial Services, U.S. Postal Service

**\$1,000 and above:** Advanced Technology Ventures, Andersen Consulting\*, Aspen Technology, BankBoston\*, BBN Corporation, C.S. Draper Laboratory, Choate, Hall & Stewart\*, Chubb & Son\*, Computervision, Dataware Technologies, DiaLogos, Dow Chemical, EMC Corporation\*, Ernst & Young, Fleet Bank, Global Competitiveness Corporation, Greylock Management Corporation, Harcourt General Charitable Foundation, Hewlett-Packard, Hill & Barlow, Houghton Mifflin Company, Mangosoft Corporation, Miller Shandwick Technologies, The Millipore Foundation, Moreira Consulting, Motorola, Network General, New England Financial, Performance Motion Devices, Price Waterhouse, LLP\*, Quantum Corporation, Ropes & Gray\*, Silicon Valley Bank\*, State Street Bank & Trust, SWIFT, Sybase, Teradyne, World Trade Center

\*1997-1998 Breakfast Seminar Series Sponsor

### 1998 COMPUTER BOWL

**\$50,000 and above:** Ziff-Davis Publishing Company - Official Presenter

**\$10,000 and above:** Coopers and Lybrand, LLP, Fleet Bank, Forrester Research, Infoseek, Motorola, New York Stock Exchange, Secure Computing Corporation, Stratus Computer, U.S. Web

**\$5,000 and above:** Flag Venture Management

**\$1,000 and above:** Cunningham Communication, Moreira Consulting, Testa, Hurwitz & Thibault, LLP, WBZ-TV

### THE COMPUTER CLUBHOUSE

**\$50,000 and above:** Argosy Family Foundation, Reebok Foundation

**\$25,000 and above:** Bell Atlantic, Peter F. Drucker Foundation, *Reader's Digest* DeWitt Wallace Fund

**\$5,000 and above:** Anna B. Stearns Foundation, The Boston Foundation, *Boston Globe* Foundation, Kelvin F. Cross, The Millipore Foundation, State Street Foundation

**\$1,000 and above:** Shirley Resnick, Stride Rite Charitable Foundation, TXJ Foundation

**\$500 and above:** Robert Treat Paine Association

### FRIENDS OF THE MUSEUM

**\$5,000 and above:** Richard and Nonnie Burnes, Richard and Virginia Case, Robert Davoli and Eileen McDonagh, Gardner Hendrie and Karen Johansen, Kapor Family Foundation, F. Grant and Dorrit Saviers, Paul and Kathleen Severino, Michael Simmons

**\$2,500 and above:** Anonymous, Albert Aiello, Jr., Richard and Judy Anders, Lynda Schubert Bodman, William Foster, Terri Holbrook, John Mashey and Angela Hey, Benjamin and Maureen Robelen, Dan Schwinn, Larry and Dawn Weber

**\$1,000 and above:** David L. Anderson, Charles and Constance Bachman, Carol Bartz, Edward Belove and Laura Roberts, Erich and Renee Bloch, Jeff Braun, Richard Carpenter, Arthur and Virginia Carr, Steve and Maureen Chehey, Juan Collas and Susan Sereno, Howard E. Cox, Jr., Stephen Crosby and Helen Streider, Brian Cullinan, John and Agnes Cullinane, Andrea Cunningham, David Cutler and Deborah Girdler, Jean and Sylvia De Valpine, Robert Frankston and Eleanor Elkin, Sam Fuller, Gideon I. Gartner, Alain and Carol Hanover, Theodore Johnson, John and Linda Loewenberg, David Mahoney, Howard and Colleen Messing, John and Catherine Mandlie, Barry W. Margolin, Laura and Ken Morse, Isaac and Renee Nassi, Barry and Catherine Nearhos, Katherine C. Patterson, Paul R. Pierce, William Seifert, Richard Shaffer, Leonard J. Shustek, John F. Shoch, Irwin J. Sitkin, Max and Nancy Steinmann, Joel D. Sugg, Gary and Janet Vacon, William Wulf and Anita Jones, the late Charles Zrakat and Shirley Zrakat

### LIBRARY MEMBERS

Adams Street Library, Bedford Public Library, Belmont Public Library, Brockton Public Library, Brookline Public Library, Cohasset Public Library, Eastham Public Library, Fletcher Public Library, Goodnow Public Library, Haverhill Public Library, Hingham Public Library, Holliston Public Library, Jonathan Bourne Public Library, Leominster Public Library, Lynn Public Library, Lucius Beebe Memorial Library, Malden-Everett Family Network, Malden Public Library, MENTOR Clinical Care, Pollard Memorial Library, Reading Public Library, Revere Public Library, Thayer Public Library, Topsfield Town Library, Waltham Public Library, Wayland Free Public Library, Wellesley Free Library, Winchester Public Library

### ANNUAL SUPPORTERS

**\$500 and above:** Boston Gas Company, John G. Carbery, Walter M. Carlson, Donald and Edith Daykin, Nick and Margaret DeWolf, Andrew and Sarah Feit, Ernest and Elizabeth Jennes, Jeffrey and Marlene Kalb, John N. Little, Carl and Wilma Machover, Joseph C. Morris, James N. Porter, Robert W. Puffer and Jane Wilson

**\$250 and above:** Art and Betty Bardige, Jim and Roberta Bell, Leo L. Beranek, Howard and Holley Cannon, Peter and Kate DeWolf, Lloyd and Eleanor Dickman, Lucien and Catherine Dimino, William T. Elliott, John H. Esbin, Barry James Folsom, Donald A. Gaubatz, Robert and Marlon Grimm, Gail A. Jennes, Richard H. King, Arnold Kraft, Thomas E. Kurtz, Mike and Kathleen LeRoy, Jon and Judith Liebman, John and Elizabeth Little, Arthur Luehmman, Thomas Marlowe, Melvin J. Mason, Jr., Richard McCluskey, Tron McConnell, Todd Medlock, Charles and Kathy Minter, Arthur H. Nelson, Anthony and Marilyn Oettinger, Paul Pangaro, Edward and Rhonda Perkins, Douglas and Pat Ross, Rita Sepelwitz Saltz, Michael J. Samek, Sarah Schliermeyer, Robert and Jean Spencer, Juliet Sutherland and Jay Koven, Michael and Marcella Thompson, Harvey W. Wiggins, Jr., William Gallagher Associates, Gifts and Joann Witman

### MATCHING GIFTS COMPANIES

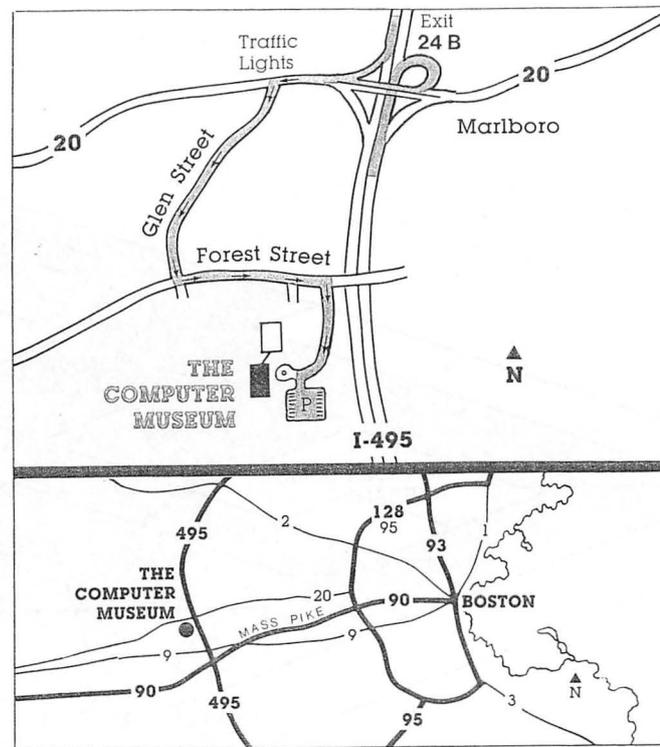
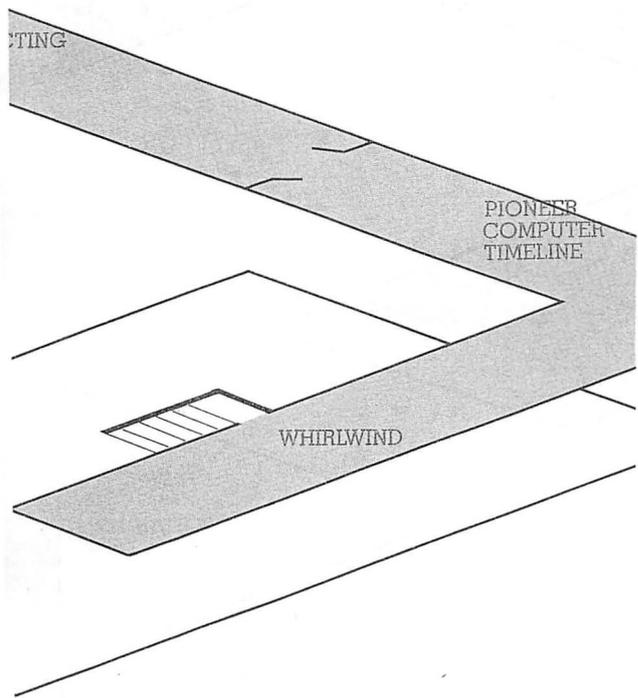
Bay Networks, Computer Associates International, Hoechst Celanese, IBM Corporation, Microsoft Corporation, Pfizer, Sun Microsystems

### DONORS TO CHARLES ZRAKAT MEMORIAL FUND

Alpha Industries, Chris and Renee Argyris and Family, Ruth Helen Banghart, BankBoston, Walter and Lillian Bateman, Mary Ann Bedick, Larry Belvin, Boston Edison, Paul and Arlene Breen, Elrita and Russell Callahan, Richard and Beverly Charlton, Robert and Mrs. Charpie, Concept Five Technologies, Dr. Barry and Mrs. Davidson, Thomas and Blanche Duff, Robert and Ann Everett, Chad and Anne Gifford, S. William and Jacqueline Gouse, David and Marilyn Heebner, Jim Henderson and Mary Pulvermacher, Lawrence and Martha Holmes, Steven B. Lipner, John Paul III and Margaret Locher, Holly Magna, Medallion Enterprises, LLC, Mitretek Systems, Joseph and Gail Monayer, New England Pension Consultants, Pfizer, John and Helen Quilty, David and Katherine Ragone, Elizabeth and John Ronayne, Steven and Ellen Freeman Roth, Shirley Roubau and Family, Alan Salisbury, V.J. Shah and Company, Alan and Barbara Shoolman, Maria Stokes, Bruce and Sandra Tuthill, Eliot and Louise Vestner, Volvo Group North America, Isadore and Marilyn Wasserman, Glen and Lynn Wegner, Wyman - Gordon Company

The Museum recognizes all In-Kind Donors, Donors of \$100 and more, and Volunteers in its *Annual Report*.

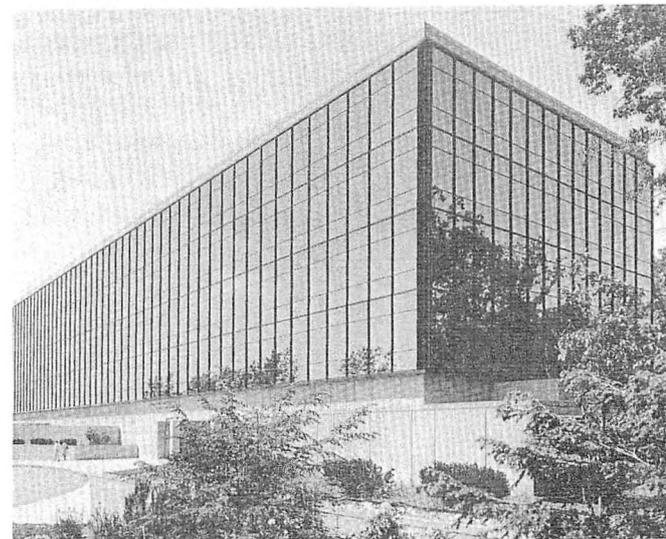
We apologize for any inadvertent omissions from our donor list. Please inform us of any errors so that we may correct our records.



The Computer Museum is open to the public Sunday through Friday, 1:00 pm to 6:00 pm. There is no charge for admission.

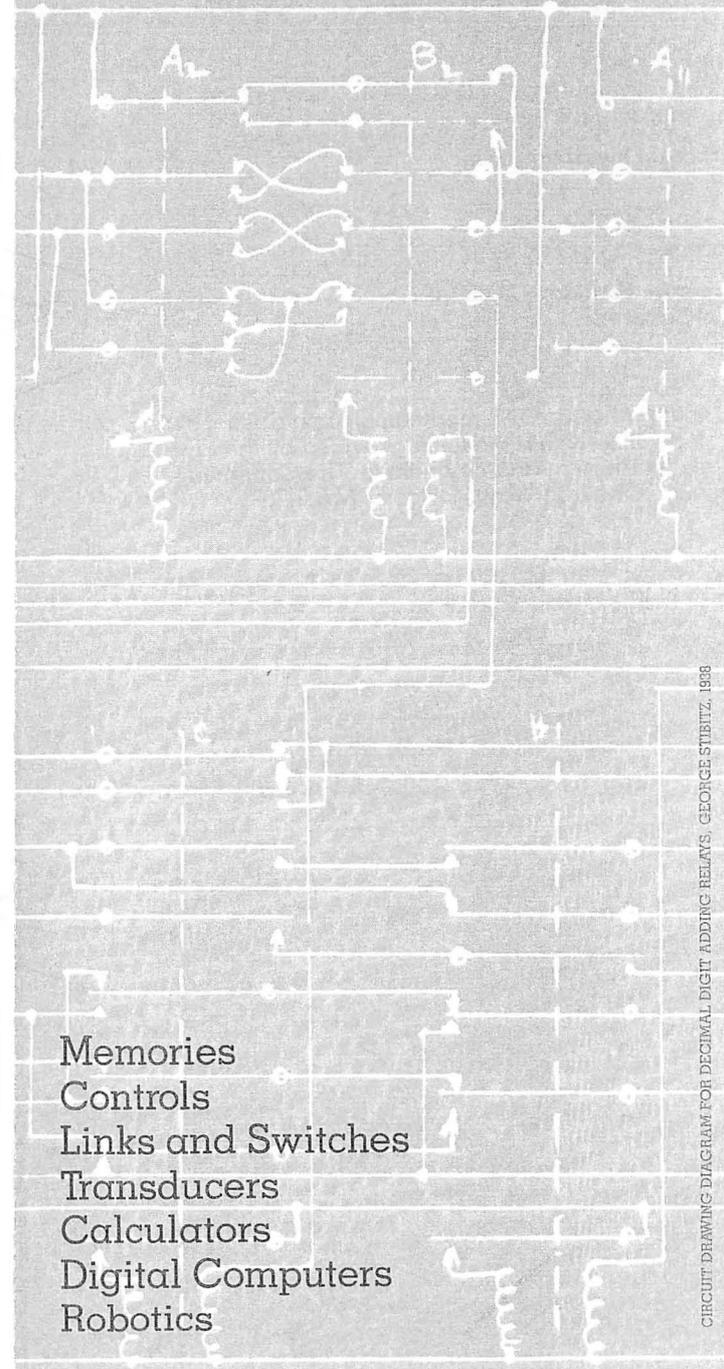
For more information call 617-467-4036.

**The Computer Museum**  
 One Iron Way  
 Marlboro, Massachusetts 01752



# The Computer Museum

For the preservation of computing history



- Memories
- Controls
- Links and Switches
- Transducers
- Calculators
- Digital Computers
- Robotics

CIRCUIT DRAWING DIAGRAM FOR DECIMAL DIGIT ADDING RELAYS, GEORGE STUBITZ, 1938

**Membership**

Members of The Computer Museum receive announcements of lectures, seminars and excursions, invitations to events and openings, discounts in the museum store, a membership card, and the quarterly museum **Report**. Through the Association, members can participate in the docents program, planning events and programs, and advising on activities.

**Member - \$25**

(Individuals, non-profit organizations, libraries (one year membership))

**Corporate Member - \$125**

(one year membership)

**Founder - \$250**

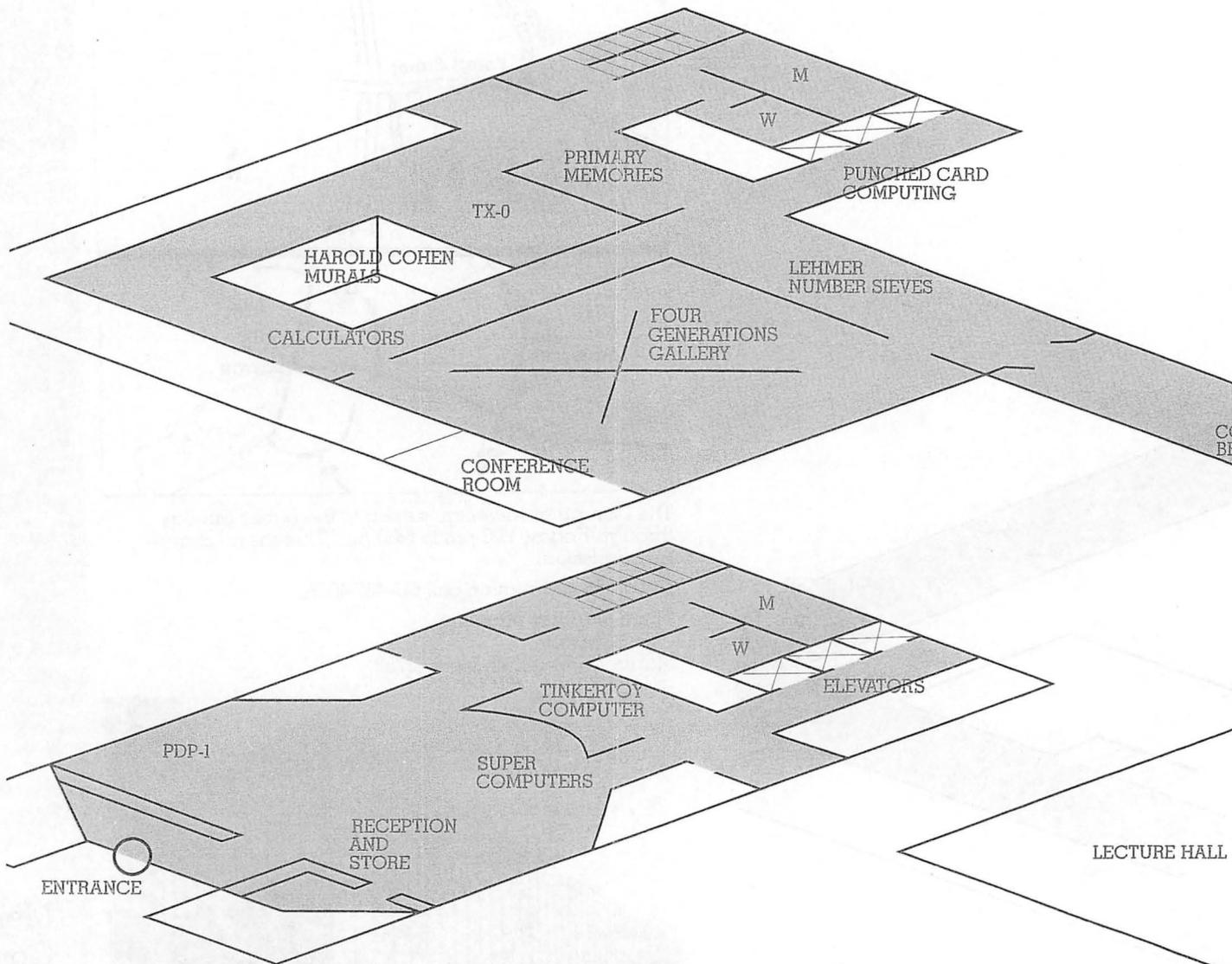
(must be received by 6/84)

**Corporate Founder - \$2500**

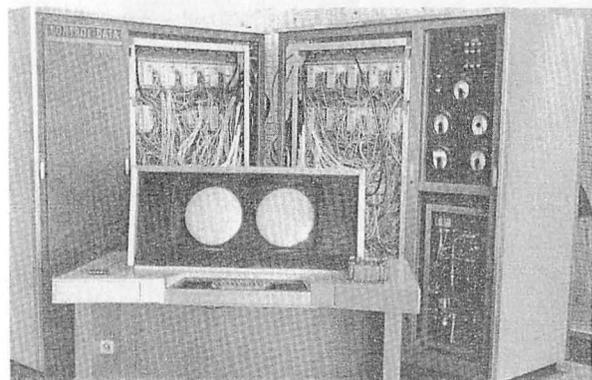
(must be received by 6/84)

enclose payment of \$ \_\_\_\_\_ payable to The Computer Museum. All membership contributions are tax-deductible within the limits provided by the law. Please return form and payment to: The Computer Museum, One Iron Way, Marlboro, MA 01752

\_\_\_\_\_  
 SS  
 \_\_\_\_\_  
 own  
 \_\_\_\_\_  
 Zip  
 \_\_\_\_\_  
 name  
 \_\_\_\_\_  
 SS  
 \_\_\_\_\_  
 State Zip  
 \_\_\_\_\_

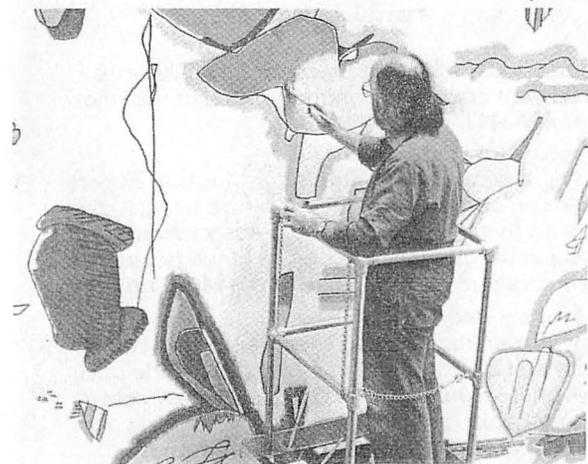


Computer Museum is a non-profit public foundation, created to preserving and exhibiting an industry-wide, field-based collection of the history of information processing with significant artifacts, documents, photographs and films. Some of the areas of collecting and exhibitions described below.



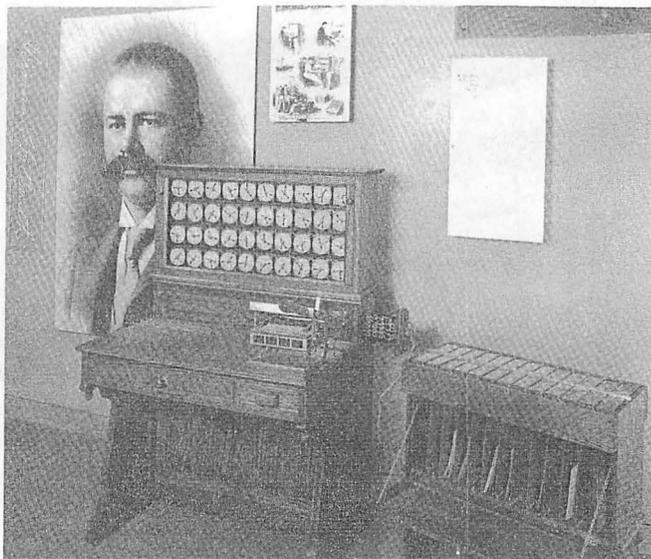
**Computers** The class of super computers represent the largest possible configuration and computing capabilities among systems. Major displays are devoted to the super computers. Exhibited are the console and processing bays of IBM's 7030, the "Stretch", 1961, 7600 serial #1, designed by Seymour Cray, and Instrument's Advanced Scientific Computer, 1971, an illustration of its multi-layered board design. Other smaller displays include parts of the LARC (Large Research Automatic Research Computer) and the University of Illinois Illiac IV.

Becky Cohen

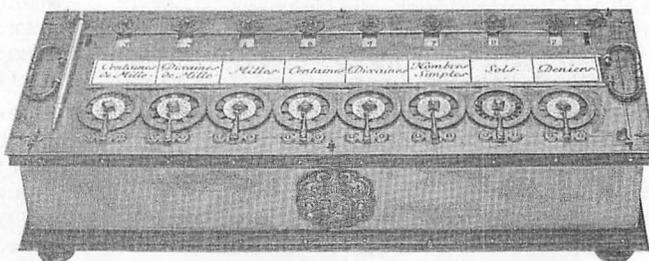


**Cohen Murals** The artist produced the computer-themed murals with an artificial intelligence program on a PDP-11/45. The program is self-directed, driven by a set of rules and decisions that emulate the human process of art-making. The black outline is computer output; color is added by Harold Cohen.

**Tinker Toy Computer** Designed by students at MIT's Artificial Intelligence Laboratory, the tinker toy computer is a mechanical model of a tic-tac-toe program written in LISP on a PDP-10.

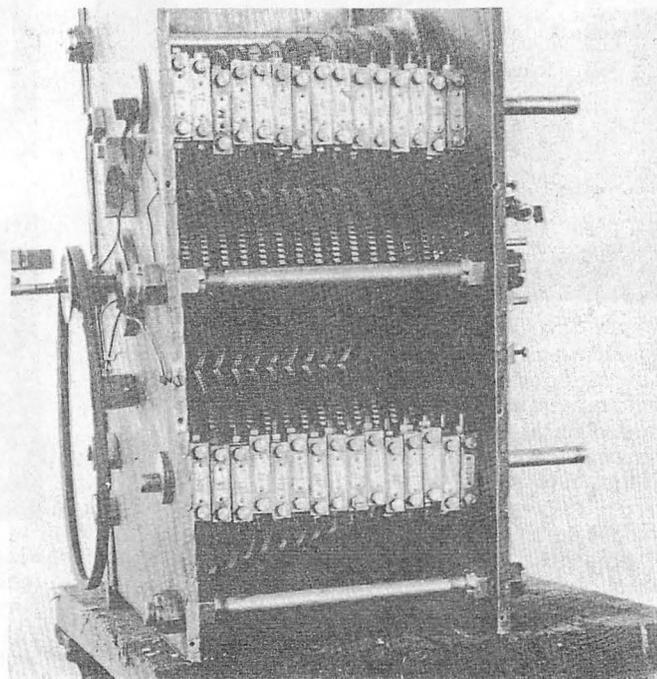


**Punched Card Computing** The exhibition traces the roots of card-controlled machines beginning with a 19th century model used to demonstrate Jacquard's mechanization of the French silk weaving process. Prior to using cards, the patterns on tapestries were generated manually, by lifting the individual silk cords on the loom. Hermann Hollerith's invention of a tabulator and sorter for the 1890 US census is the first instance of the use of punched cards in information processing. The Powers-Samas card processing system, manufactured in Great Britain in the 1950's, was designed to compile data on plant life in the United Kingdom for the British Botanical Society and produce species location dot maps.



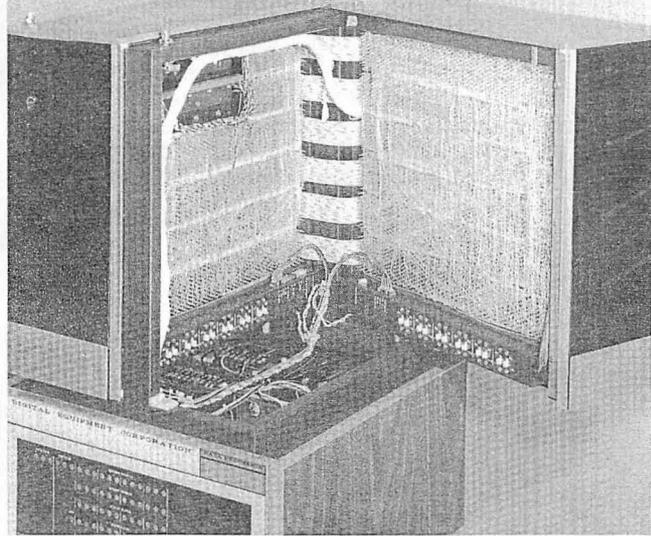
**Calculators** The collection begins with examples of the abacus, the oldest single register calculator still in use, and analog calculators such as early slide rules and sectors. Pascal's two function calculator of 1645 is the first of the mechanical, single register calculators based on the toothed wheel mechanism. Addition is direct and

subtraction is by complement arithmetic. Three and four register calculators were derived from Leibniz's concept of a stepped-wheel mechanism. This allowed an automatic carry, thus multiplication and division. Steiger's Millionaire is a late 19th-century example of a four register calculator with an automatic multiply function. The Comptometer, Brunsviga, Burroughs and Monroe desk calculators follow, the latter two motor-driven to increase the speed of operation.

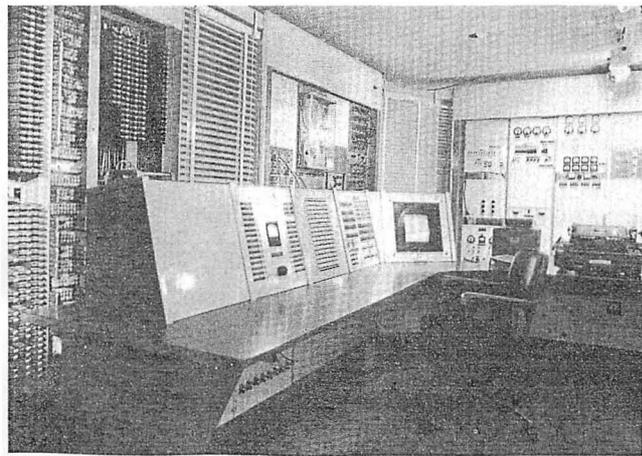


**Lehmer Number Sieves** D.H. Lehmer, a number theorist, constructed the four exhibited number sieves to test possible solutions to complex problems. The earliest examples date from 1928, with a reconstructed model of a sieve that used bicycle chains as its technology and a 1932 photoelectric sieve that used gears, vacuum tube amplifiers and a photoelectric cell to detect solutions.

**Four Computer Generations** The exhibition is designed to show the major technological inventions and patents, significant computers, software and applications of each computer generation. The first computer generation is marked by machines that used vacuum tubes, diodes or a combination for logic. Most of the computers manufactured during this period were inaccessible to the general user because of their size and cost, but the LGP-30 and the Bendix G-15 are examples of computers for small scale scientific computing. The advent of the second generation was seen in the transition from vacuum tubes to solid state, semiconductor devices during the 'fifties. The transistor permitted more flexibility in logic design, faster speed and smaller size, establishing the concept of the

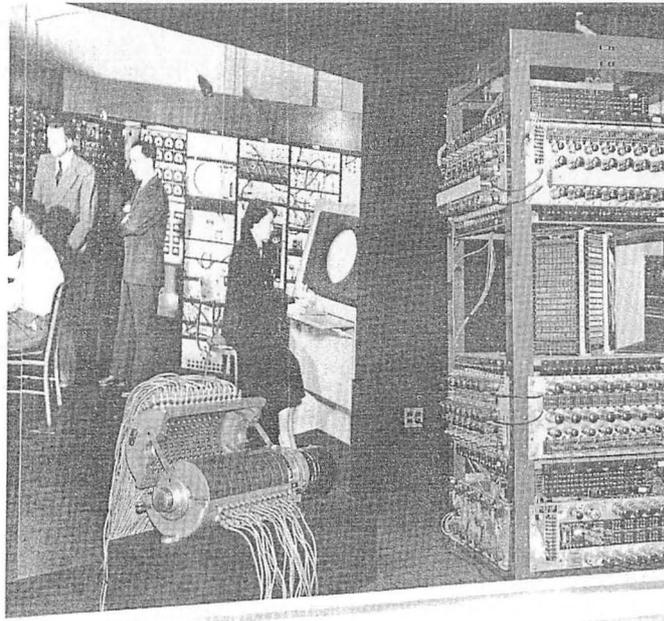


minicomputer. The CDC 160A and the PDP-8 are examples of significant machines manufactured during this period. The third generation was started by several individuals who envisaged the integration of electrical functions, introducing the integrated circuit. This allowed further miniaturization and mass production of computer systems. Many new companies built minicomputers and IBM 360/370 plug-compatible machines, based on purchased integrated circuits. The technological leap into the fourth generation was marked by the production of an entire central processing unit on a single chip—the microprocessor—by Intel. The design and manufacture of chips and several examples of fourth generation computers are explained.



**1-0** One of the first full-scale transistorized computers, MIT's Lincoln Laboratory designed and built the TX-0 in 1956 to test transistor logic. It is reconstructed in operating condition at the Museum.

**Primary Memories** A range of devices, from the Williams tube to the magnetostrictive delay line, illustrates the diversity of first generation memories. The evolution of core memory from the 1951 first core plane used on Whirlwind to the highly dense cores of the mid-70's is shown.

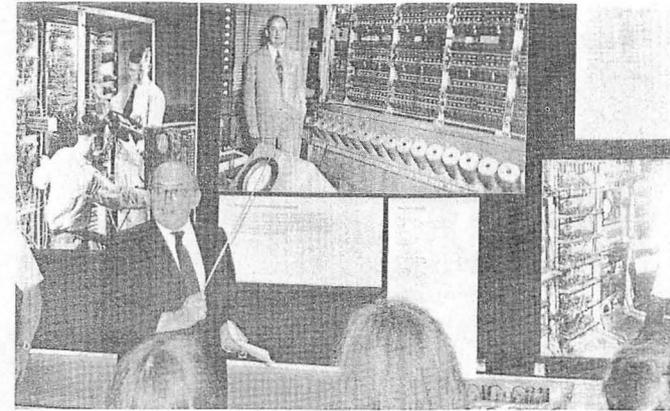


**Pioneer Computer Timeline** Thirteen one-of-a-kind machines designed and built during the years 1935–1951 demonstrated the feasibility of programmed data processing. Each one added to the knowledge base needed for manufacturing commercially available computers. Photographs, machine specifications and quotations from the project leaders are included for George Stibitz's complex calculators; Konrad Zuse's Z1 through Z3; the Atanasoff-Berry Computer; Harvard University's Mark I; the British Colossus; the University of Pennsylvania's ENIAC; John von Neumann's EDVAC; the IAS computers; Cambridge University's EDSAC; early Manchester University computers; Alan Turing's Pilot ACE; and the National Bureau of Standards SEAC and SWAC. Significant artifacts accompany photographs and text for certain machines: a model of Stibitz's binary adder and a Bell Telephone Laboratories' Model 19 teleprinter; the breadboard and original memory drum from the Atanasoff-Berry Computer; a tape pulley from the Colossus; a function table from the ENIAC; a mercury memory tank cover and driver from the EDSAC; a Williams tube from the Manchester machines; and a section of the console, a register bit slice and the core memory from MIT's Whirlwind. The twelve projects, developed in laboratories and universities and by individuals with specific computational needs, convinced the scientific, government and business communities of the reality of the potential of the stored program, general purpose computer.

## Museum Services

### The Computer Museum Lecture Series

Lectures focus on benchmarks in computing history and are held six times a year. All lectures are videotaped and archived for scholarly use.



### Gallery Talks

Talks by computer historians, staff members and docents are offered throughout the year. Museum members receive notices of the scheduled talks which are open to the public.

### Group Tours

Guided group tours are available by appointment for a fee of \$25. The tours last about one hour and cover highlights from the history of computing.

### Museum Store

Books, posters, postcards, and other items related to the history of computing are available for sale.

### Facilities

The Museum's lecture hall and reception facilities are available for rent on a prearranged basis. For information call 617-467-4443.

### The Computer Museum Report

A quarterly publication, The Computer Museum Report offers articles on exhibits, announces future events, gives information on the Museum Members Association and recaps past events and lectures. Issues of the Report are sent to members and are available in the Museum store.

### Museum Library and Viewing Room

The library is open for research to students, historians and members of the Museum. Its holdings include documents relevant to exhibited artifacts, rare books, computing history books, photographs and periodicals. A collection of videotapes is available for viewing by appointment.

### Intern Program

Students are invited to apply for paid internships at the Museum for any period up to six months. The number of students varies according to the number of activities going on at any time. Internships complement the various operational sections of the Museum.

Place  
stamp  
here.

Membership Coordinator  
**The Computer Museum**  
300 Congress Street  
Boston, Massachusetts  
02210

---

**For Members Only:** exhibit previews; free subscription to the Museum's illustrated quarterly magazine; invitations to Museum events; free admission and a 10% discount on Museum Store gifts.

---

Amount Enclosed \_\_\_\_\_ Please make checks payable to The Computer Museum.

Charge it to  Visa  MasterCard

Account Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

**Yes!** I would like to help support the Museum and share in the excitement of its move to Boston. Please enroll me as a Member for the next year, beginning right now.

- |  |  |
|--|--|
| <input type="checkbox"/> Individual \$25   | <input type="checkbox"/> Patron \$1000     |
| <input type="checkbox"/> Founder \$250     | <input type="checkbox"/> Associate \$2500  |
| <input type="checkbox"/> Contributor \$500 | <input type="checkbox"/> Benefactor \$5000 |

All membership contributions are tax-deductible within the limits provided by law.

If your company can match your gift, check here:

Company Name \_\_\_\_\_

Dear Computing Friend:

"There is by now little doubt that we are the first human generation of the Information Revolution," Michael Dertouzos, Director, MIT Laboratory for Computer Science.

A new international museum -- The Computer Museum in Boston, Massachusetts -- covers this extraordinary revolution and the preceding generations. It is a story of ideas, inventors and their machines.

You are cordially invited to become a member and enjoy an array of benefits while supporting this unique educational institution.

The Museum just moved from Marlboro, Massachusetts to Museum Wharf in downtown Boston, where it will reopen this fall. Join now and participate in the evolution of a new Museum. Become a member and receive:

- o a subscription to the Museum's illustrated magazine, filled with lively reminiscences by computing scholars and the inventors themselves.
- o invitations to events and lectures.
- o a full-color Museum Store catalog and a 10% discount on all purchases. Ideal gifts for computer buffs: chocolate computers, chip tie tacks and sweatshirts sporting the first flip-flop ever designed.
- o free admission to The Computer Museum.
- o full library privileges with access to the Museum's extensive print and video archives.

Become a Founding or Contributing Member and be recorded in the Museum archives as a Founder. Join as a Patron, Associate or Benefactor and you will receive a mini-museum -- a set of original artifacts from the computer generations. Join now by returning enclosed envelope with your check or credit card number.

Cordially, 

Gwen Bell, Director

P.S. If you are already a member, please pass this on to a computing friend. Thank you.



# Join Now!

Please fill in:

- Individual \$25**  
Individual Members and above receive all the benefits listed on page 2.
- Founder \$250**  
Founders and Contributors joining before June 1984 will be recorded in the Museum archives as Founding Members.
- Contributor \$500**
- Patron \$1000**  
Patrons, Associates and Benefactors also receive a set of original artifacts, illustrating the computer generations.
- Associate \$2500**
- Benefactor \$5000**  
Benefactors will be recognized as contributing to the establishment of the Museum at its new location in downtown Boston.

Please make checks payable to The Computer Museum. If you would like to pay with MasterCard or Visa, indicate your card number below. Gifts to the Museum are tax-deductible within legal limits.

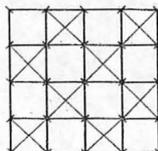
Amount enclosed \_\_\_\_\_ Date \_\_\_\_\_  
Charge it to  Visa  MasterCard  
Account Number \_\_\_\_\_  
Expiration Date \_\_\_\_\_  
Signature \_\_\_\_\_

If your company will match your gift, please check here:

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City/Town \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

Please mail this membership form to:

Membership Coordinator  
**The Computer Museum**  
300 Congress Street  
Boston, MA 02210

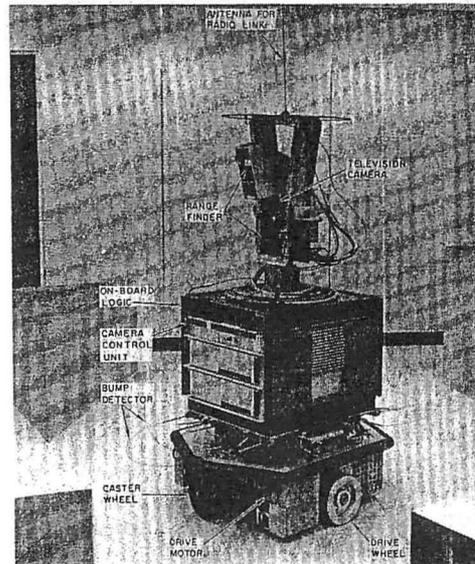


# The Computer Museum

an international museum for the history of information processing

## The Collection and Exhibits

The Museum's collection of original artifacts includes Napier's bones, a pocket-sized calculating device from 1617; Whirlwind, the first computer with core memory, circa 1951, and **Shakey-the-Robot**, the first mobile robot with artificial intelligence, 1969.



Exhibits cover information processing from the abacus to the silicon chip. Computing history is illustrated through machines, applications, manufacturing technology and the lives of inventors and pioneers.

## Archives/Library/Research

The unique archives include videotapes, films, printed materials and photographs on the history of computing. The Museum sponsors research by scholars and advanced students.

## Programs

Museum programs include lectures by computing pioneers; gallery talks on exhibits; symposia; yard sales; excursions; and films.

## Publications and Education

Museum publications include the quarterly report with contributing authors such as EDSAC inventor Maurice Wilkes. Slides, historic modules and other educational materials are also avail-

# MEMBERSHIP



Vacuum tubes, Whirlwind Computer, 1951; integrated circuits, Apollo Guidance Computer, 1965.

# The Computer Museum

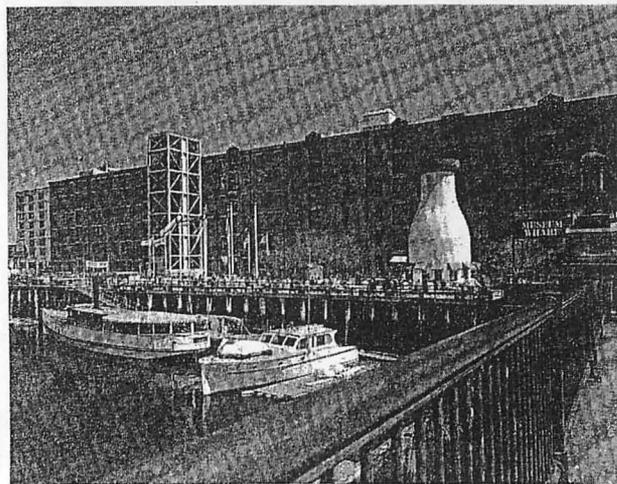
# The Computer Museum

is the only institution of its kind in the world, chronicling the evolution of information processing from the abacus to the silicon chip through exhibitions, publications, historical research and programs.

The Museum recently moved to Boston's Museum Wharf from Marlboro, Massachusetts, where it opened in 1982. The new location multiplies the Museum's space fivefold and is easily accessible to downtown Boston, Cambridge and Logan International Airport.

Exhibitions will offer visitors a chance to play the first computer game, to hear the Kurzweil Reading Machine for the blind read aloud, and to walk through the SAGE, the largest vacuum tube computer ever built. Lectures, seminars and classic films will be featured in a new auditorium.

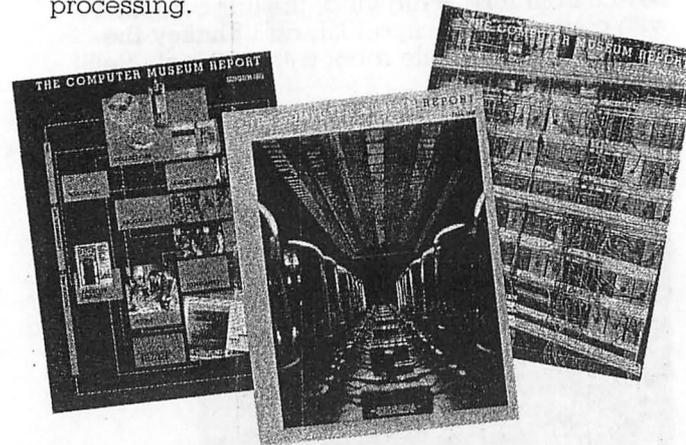
The Museum will continue to actively collect the most valuable artifacts, films and print materials on information processing history for its library and future exhibitions.



Museum Wharf

# Become a Member Now

and participate in the formative period of the Museum. If you are far from Boston, the Museum will keep you up to date and let you in "behind the scenes" via its quarterly magazine. If you live nearby, you can also enjoy many preview opportunities. But, no matter where you live, as a member you will be counted as contributing to the preservation of the history of information processing.



# Member Benefits

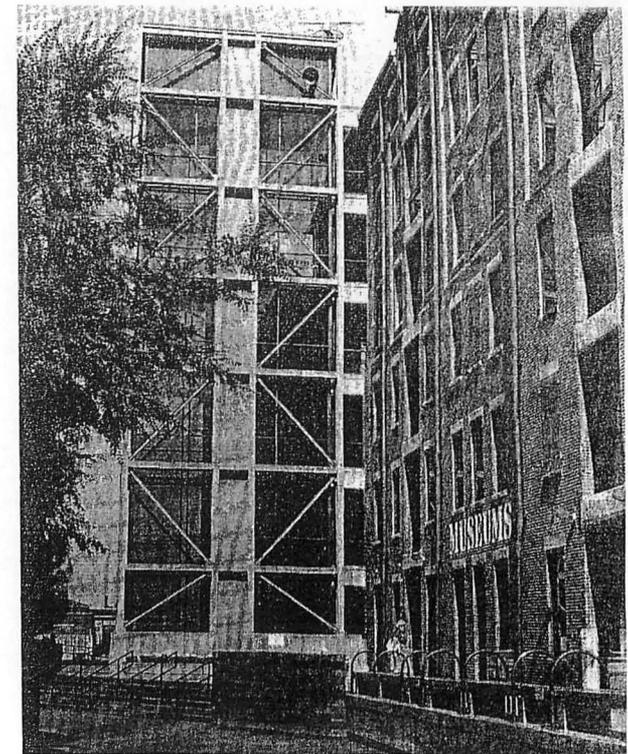
All Members receive:

- a subscription to the quarterly Computer Museum Report. An illustrated magazine filled with lively reminiscences by computing scholars and the inventors themselves; synopses of Museum lectures and events; and articles on artifacts, archives and exhibits.
- a full-color Computer Museum Store catalog and a 10% discount on all merchandise. Ideal gifts for computer buffs include chocolate calculators, computer jewelry and sweatshirts sporting the first flip-flop ever designed.
- invitations to Museum events and lectures.
- an opportunity to participate in the development of the Museum by advising on acquisitions and programs.
- priority admission to special lectures, events and exhibits.
- free admission to The Computer Museum.
- full library privileges with access to the Museum's extensive print and video archives.
- a chance to be part of the Members Association that assists with Museum activities.

# Member Categories

Join at the most appropriate level:

- Individual** \$25  
Individual Members and above receive all the benefits listed on the preceding page.
- Founder** \$250  
Founders and Contributors joining before June 1984 will be recorded in the Museum archives as Founding Members.
- Contributor** \$500
- Patron** \$1000  
Patrons, Associates and Benefactors also receive a set of original artifacts, illustrating the computer generations.
- Associate** \$2500
- Benefactor** \$5000  
Benefactors will be recognized as contributing to the establishment of the Museum at its new location in downtown Boston.



Museum Wharf

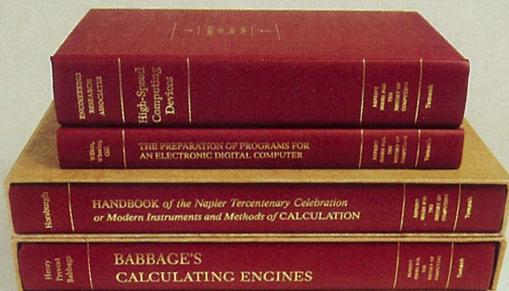


**2A The Preparation of Programs for an Electronic Digital Computer** by Maurice V. Wilkes, David J. Wheeler, and Stanley Gill. Introduction by Martin Campbell-Kelley. Originally published in 1951, 165 pages. **\$30.00** (members \$27.00)

**2B High-Speed Computing Devices** by the Staff of Engineering Research Associates. Introduction by Arnold A. Cohen. Originally published in 1950, 451 pages. **\$38.00** (members \$34.20)

**2C Babbage's Calculating Engines** by Henry Babbage. Introduction by Allan G. Bromley, originally published in 1889, 390 pages. **\$45.00** (members \$40.50)

**2D Handbook of the Napier Tercentenary Celebration or Modern Instruments and Methods of Calculation** by E.M. Horsburgh. Introduction by M.R. Williams, originally published in 1914, 384 pages. **\$42.00** (members \$37.80)



**Babbage Institute Reprint Series on the History of Computing.** Books designed for lasting quality. Beautifully bound in dark-red hardcovers with titles in gold ink. New introductions place the works in context

for present day readers. Jointly published by MIT Press and Tomash Publishers of Los Angeles.



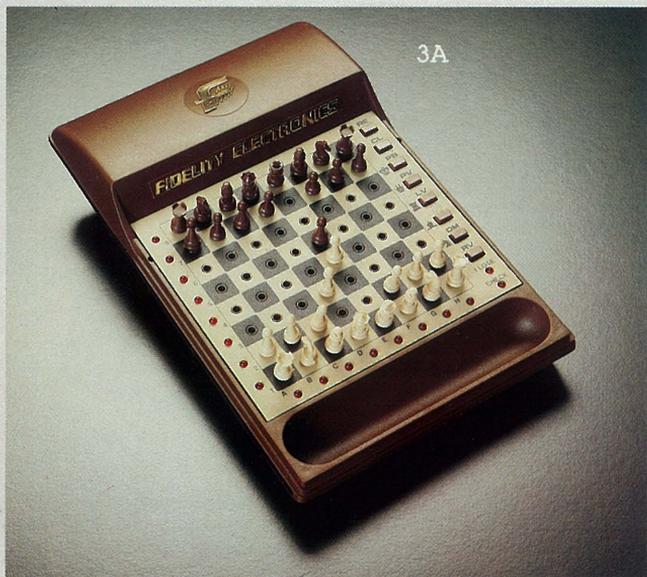
**2E Diskette Holder.** Perfect Stocking Stuffer for the hackers on your list. End the frustration caused by damaged floppies with our sturdy, plastic diskette case. Core memory pattern neatly screened on the cover. Holds up to three 5 1/4" disk-

ettes. Don't forget to order several for yourself. **2 for \$5.95** (members, 2 for \$5.35)

**2F The Computer Museum Briefcase.** Created exclusively for the Museum

with a detachable shoulder strap, this briefcase is designed for students and professionals. Inside slip pocket and outside zip section with divider for pens, pencils and pads. Grey water-resistant nylon with sturdy black hardware. 14 1/2 x 11 x 3". **\$34.95** (members \$31.45)

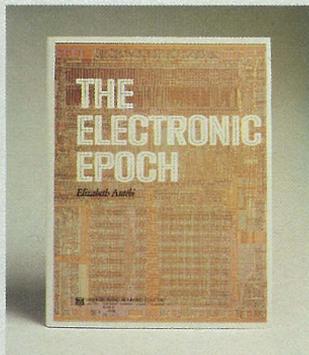
2F



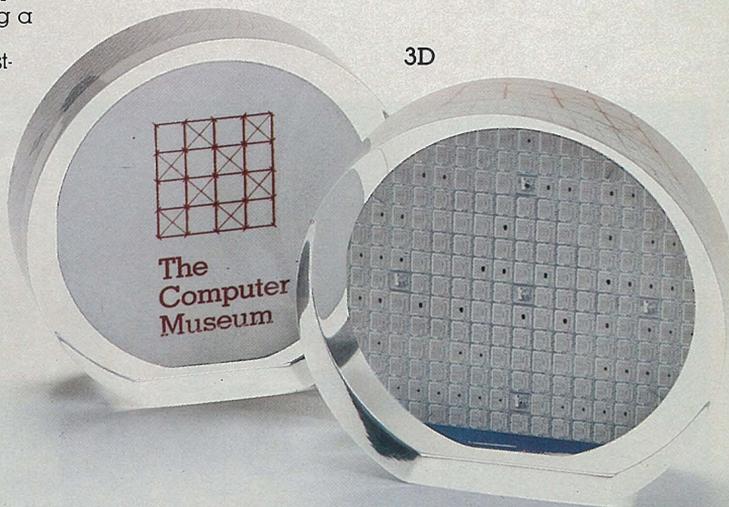
3A

**3A Mini Sensory Chess Challenger** from Fidelity Computer Products. Battery operated. An ideal chess partner anytime, anywhere. Reads your move instantly, indicating counter-moves with LED's and a tone. Infinite levels of play. You can even change sides during a game. Includes compact, impact resistant case, dust-cover and chess pieces. Batteries not included. 8 1/2 x 4 1/2 x 1 7/8". **\$65.00** (members \$58.50)

**3B Adaptor.** Optional AC transformer for use with Mini Sensory Chess Challenger. Ideal for home or dorm use. Play without batteries. **\$12.95** (members \$11.65) not shown



**3C The Electronic Epoch** by Elizabeth Antébi, hard-cover, 280 pages, 1983, Van Nostrand Reinhold. This book "recounts the fascinating scientific and technological discoveries that have turned science fiction into the reality of electronics today. Scores of eyewitness accounts and documents help to unravel the mystery of — yet heightened fascination with — the field." **\$49.50** (members \$44.55)

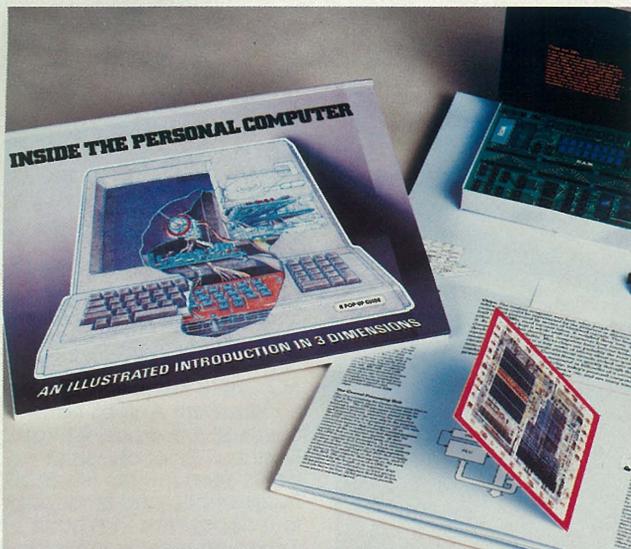


3D

Phone Orders  
**(617) 542-0476**



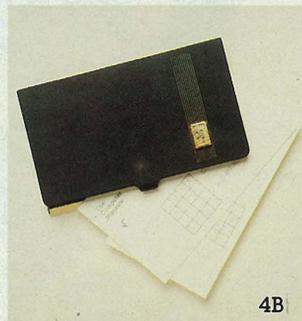
**3D Technology Preserved!** Ideal gift for your computing friends. An actual 3" silicon water embedded for posterity in a 3 3/4" diameter piece of lucite. A lively conversation piece for desk top or coffee table. **\$25.00** (members \$22.50)



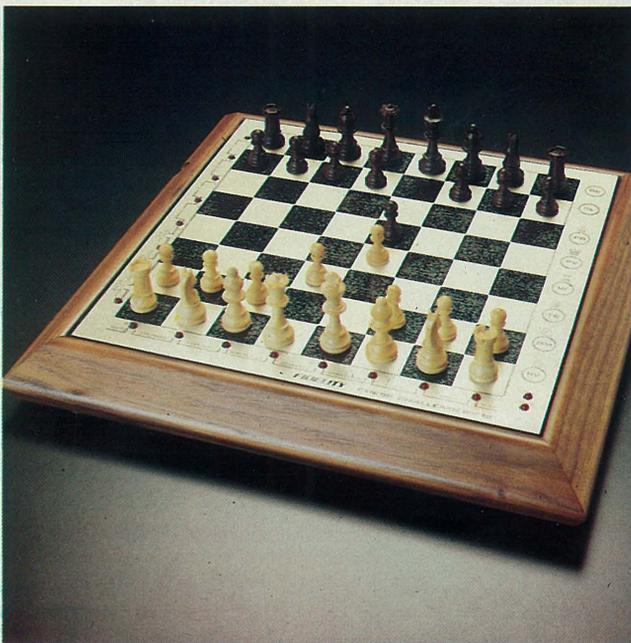
**4A Inside the Personal Computer: An Illustrated Introduction in Three Dimensions** written by Sharon Gallagher, engineered by Ron van der Meer. Hardcover, 6 pop-up spreads, with illustrations and charts, 1984, Abbeville Press. "Open the book and a friendly

computer pops up to guide you through the inside of the computer, from input to output. On your trip, you'll visit disk drives, chips and printers, and learn about everything from bits to bytes to RAM and ROM." **\$19.95** (members \$17.95)

**4B Card Case.** Also from Nancy & Rise, a deluxe business card case of matte black metal. Elegantly styled with a micro-circuit set onto the front. A wonderful gift, super stocking stuffer. **\$45.00** (members \$40.50)



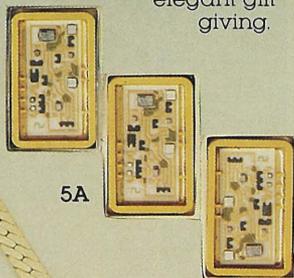
4B



**4C Sensory Chess Challenger "12,"** new from Fidelity. Featuring the "Budapest Third World Microcomputer Chess Championship" program. Bit for bit and identical speed. The only program to suffer no losses during the competition." 12 levels of play; tone and LED's indicate moves; includes player and practice modes. Handcrafted nut wood housing with sensory top, 100% solid state circuitry, handsome hand-carved Staunton wood pieces. 14 x 14 1/2 x 1 3/4". **\$275.00** (members \$247.50)

Phone Orders  
**(617) 542-0476**

**Designer Jewelry.** Hybrid micro-circuit boards distinguish this line of exquisite jewelry and accessories from New York designers Nancy & Rise. Subtle colors and 3-dimensional details add elegance to the world of "micro-chip jewelry." Each piece is presented in a specially designed ultra-suede pouch for elegant gift giving.

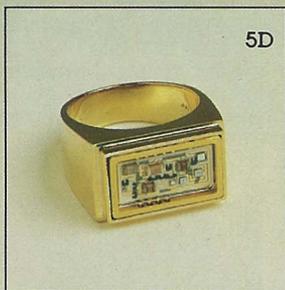


5A



5B

5C



5D

**5D Ring.** A micro-circuit elegantly set in a solid 14K gold man's ring. This item is special-ordered in your size, 6 weeks delivery. **\$585.00** (members \$526.50)

**5A For the ladies!** Three rectangular micro-circuits in sterling silver bezels distinguish this designer brooch. **\$95.00** (members \$85.50)

**5B Cufflinks** with a square chip set in a bezel of matte black metal with vermeil findings. **\$39.50 pair** (members \$35.55 pair)

**5C Tie Tack.** A stunning complement to the cufflinks. It exhibits Nancy & Rise's classic attention to detail and design. **\$15.75** (members \$14.17)



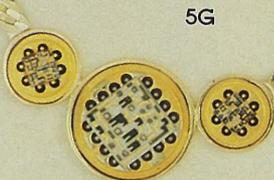
5E

5F

**5E Vermeil Cufflinks.** For the executive! Nancy & Rise cufflinks set in a bezel of vermeil, 24K gold on sterling silver. A very special gift for the computing man! **\$110.00 pair** (members \$99.00)

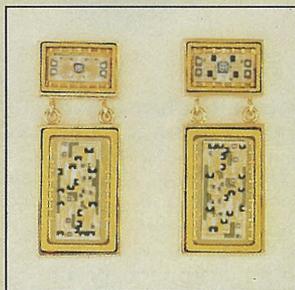
**5F Vermeil Tie Tack.** Our hybrid circuit board tie tack set in vermeil. Perfect for any wardrobe. **\$25.00** (members \$22.50)

**5G The ultimate in computer jewelry.** Treat yourself or that special someone. Three miniature, square micro-circuits presented in round settings of 14K gold set into a 14K gold flat-link 16" chain. **\$500.00** (members \$450.00)



5G

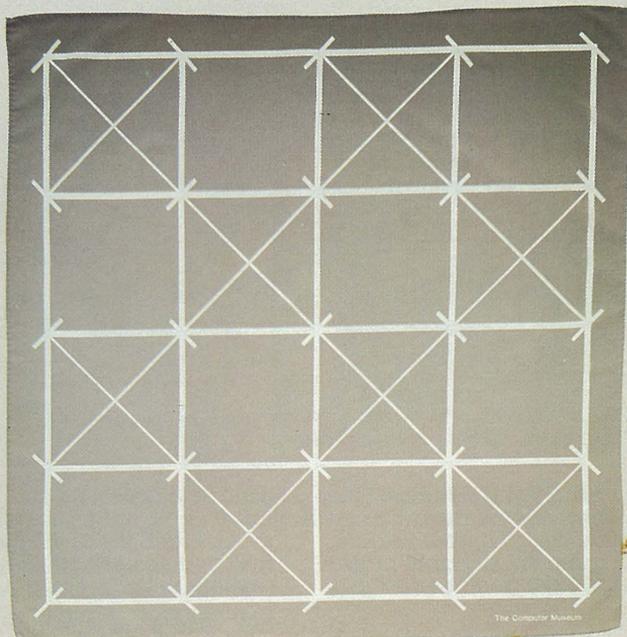
**5H Earrings.** A captivating way to show the delicate nature of these micro-circuits. Set in 14K gold bezels with 14K gold studs. For pierced ears only. Non-returnable. **\$330.00** (members \$297.00)



5H

**Pierced earrings are non-returnable.**

**6A Museum Scarf.** The bold, geometric pattern of a core plane in white on a grey background. Measures a versatile 27" square, in polyester. A lovely gift. Special sale price. **\$11.95** (members \$10.75)



6A



**6B-C Core Memory Ties** for the well-dressed computer whiz. Available in two handsome color combinations, maroon core memory pattern woven into a navy blue background (as pictured) or navy core memory pattern woven into a silver grey background. Fully lined, 3" width, silk/polyester blend. Please specify navy (6B) or grey (6C). **\$16.50** (members \$14.85)

**6E-F Museum Earrings.**

Beautiful gold-plated computer chip earrings. Available as clip-ons (6E) or with gold-filled posts (6F). Please specify. Pierced earrings are non-returnable. **\$18.00** (members \$16.20)

**6G Museum Tie Tack.** **\$9.50** (members \$8.55)

**6H Museum Cufflinks.** **\$19.00** (members \$17.10)

6D



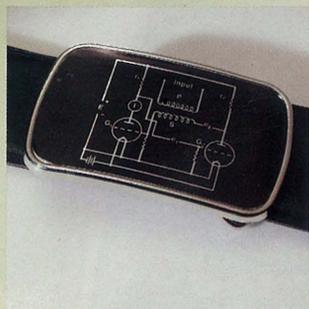
**6D Museum Pendant.** A stylish gift. Gold-plated computer chip on a 16" gold-filled chain. **\$12.50** (members \$11.25)

**Computer Chip Jewelry**

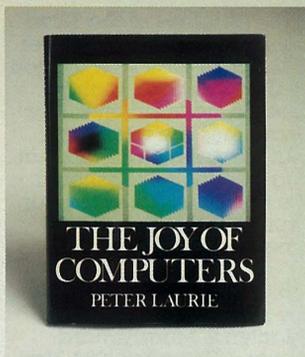
This jewelry uses original computer chips made of multiple layers of electronic circuitry built on one silicon crystal. An original, geometric design modeled after chip carrier circuitry surrounds each chip. Gold-plated finish.



Pierced earrings are non-returnable.



**7A Belt Buckle.** This 3 x 2" contoured metal belt buckle sports a core memory diagram in silver on a black background. Epoxy overlay adds a polished finish. **\$6.95** (members \$6.25)

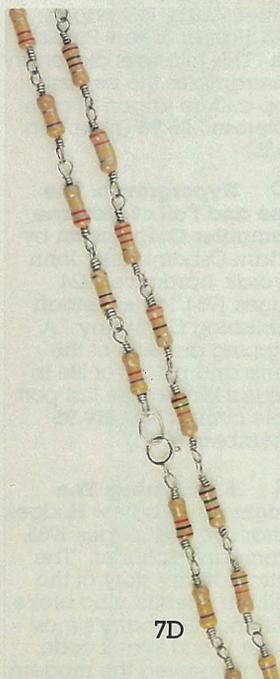


**7B The Joy of Computers** by Peter Laurie, hardcover, 191 pages, 1983, Little, Brown and Co. "A visual and topical exploration of the miraculous machine that is reshaping our future." **\$19.95** (members \$17.95)

7C



**7C Museum Tote Bag.** Red core planes screened on heavy-duty grey cotton canvas with red webbed handles. A perfect tote for hardware, software, books or your lunch. 10 x 16 x 5". **\$14.50** (members \$13.05)



7D

**7D Necklace and Bracelet.** You won't be able to resist our beaded necklace and bracelet set fashioned from actual resistors. Tan resistors with multi-colored bands. Each closes with a sterling silver clasp. 18" and 7" respectively. **\$25.00** (members \$22.50)

**8A Engines of the Mind** by Joel Shurkin, hardcover, 352 pages, 1984, W.W. Norton & Co. "This book is about people, not machines. The machines are interesting, but the people are fascinating and their story should be told. They changed our world," the author. **\$17.50** (members \$15.75)

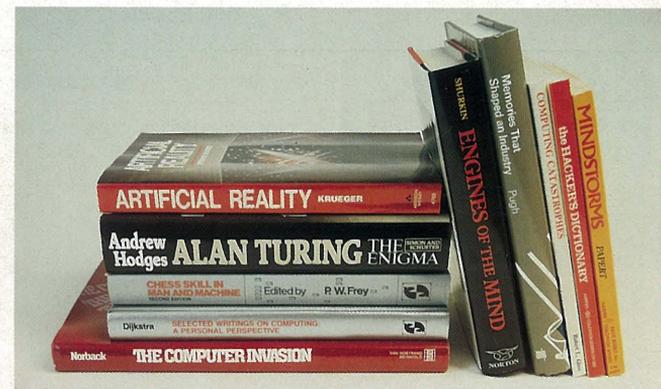
**8B Computers in Crisis** by Jerome T. Murray and Marilyn J. Murray, hardcover, 240 pages, 1984, Van Nostrand Reinhold. "This far-reaching guide explores how to avoid a crisis that could cause worldwide chaos in computer systems beginning January 3, 2000." **\$29.95** (members \$26.95) not shown

**8C The Hacker's Dictionary** by Guy L. Steele Jr. et al, paperbound, 140 pages, 1983, Harper & Row Publishers. "This hilarious dictionary unscrambles the newest pop culture jargon of computerese." **\$5.95** (members \$5.35)

**8D Hypergrowth: The Rise and Fall of Osborne Computer Corporation** by Adam Osborne and John Dvorak, hardcover, 224 pages, 1984, Idihkekethan Publishing Company. "A gripping account of the perils and pitfalls of life in the fast-lane of the first portable computers." **\$19.95** (members \$17.95)

**8E Alan Turing: The Enigma** by Andrew Hodges, hardcover, 587 pages, 1983, Simon and Schuster. "The extraordinary story of the brilliant scientist who broke 'Enigma,' Germany's most secret World War II code, who pioneered the modern computer age, and who finally fell victim to the cold-war world of military secrets and sexual scandal." **\$24.95** (members \$22.45)

**8F The Computer Invasion** by Craig T. Norback, hardcover, 192 pages, 1983, Van Nostrand Reinhold. "You will learn how the



computer insinuates itself into people's lives, as well as how legislation helps safeguard our privacy." **\$19.95** (members \$17.95)

**8G Mindstorms** by Seymour Papert, paperbound, 230 pages, 1980, Basic Books, Inc. "This widely acclaimed book presents an exciting vision of education for the future — the collaboration of computers and children." **\$6.95** (members \$6.25)

**8H Chess Skill in Man & Machine, 2nd edition**, ed. by Peter Frey, hardcover, 326 pages, 104 illus., 1983, Springer-Verlag. "Broadly recognized as the premier source on computer chess." A new edition. **\$28.00** (members \$25.20)

**8I Computing Catastrophes** ed. by Robert Glass, paperbound, 132 pages, 1983, Computing Trends. "Why did the major IBM challengers of the 1960's — General Electric, RCA, Xerox — topple one by one into the computing trash heap? Whatever happened to the larger-than-life computers of their time — the Larc, the Stretch, the Illiac? These questions and more are answered." Datamation. **\$11.95** (members \$10.75)

**8J Digital Deli** by the Lunch Group, ed. by Steve Ditlea, paperbound, 272 pages, 1984, Workman Publishing. "An entertaining and informative collection

that explores lore, lifestyles and laughs of our computerized era. Contributors include Ray Bradbury, William F. Buckley, Jr., Steve Wozniak, Nolan Bushnell and the Museum's own Stephanie Haack." **\$9.95** (members \$8.95) not shown

**8K Memories That Shaped an Industry: Decisions Leading to IBM System/360** by Emerson W. Pugh, hardcover, 336 pages, 66 illus., 1984, MIT Press. "The book offers a frank account of the immense risks and payoffs involved in high-level technology management. It covers the human side of events leading to today's computer revolution." **\$25.00** (members \$22.50)

**8L Artificial Reality** by Myron W. Krueger, paperbound, 312 pages, 1983, Addison-Wesley. "Personal Computing" says it "will intrigue readers interested in computer-controlled art forms and environments ... may well be a vision of the near future." **\$10.95** (members \$9.85)

**8M Selected Writings on Computing: A Personal Perspective** by Edgar W. Dijkstra, hardcover, 362 pages, 1982, Springer-Verlag. "This unique volume presents a representative sample of technical and personal selections from the unpublished writings of one of the founding fathers of programming methodology." **\$29.95** (members \$26.95)

FROM: (PLEASE PRINT)

---

---

---

---

---

PLACE  
STAMP  
HERE

**THE COMPUTER MUSEUM STORE**

Museum Wharf  
300 Congress Street  
Boston, Massachusetts 02210

## ORDER INFORMATION

**Telephone Orders:** For credit card orders please call 617-542-0476 10:00am-6:00pm EST. There is a \$15.00 minimum for all credit card orders. The cardholder's signature and billing address is required for all credit card purchases. Please have your credit card in hand when placing your call.

**Membership Discount:** A 10% discount is available on all Museum Store items, unless indicated, to all Computer Museum members. The member's price is shown in parentheses next to the actual price of each item. Please be sure to check off the Member's box on our order form. You are entitled to the full member's discount if you join when placing your order. For membership information please see the back of the order form.

**Customer Service:** If you have any questions regarding the merchandise or about our Museum Store please address all inquiries to Customer Service Dept., The Computer Museum Store, 300 Congress St., Boston, MA 02210.

**Prices:** The prices in this catalog are guaranteed through January 1985 with the exception of items manufactured of a precious metal. Those prices are subject to change without notice.

**Shipping Policy:** We will attempt to ship all orders within five working days. If an item is temporarily out of stock or any delay is anticipated you will be informed promptly. All items may not necessarily be shipped at the same time or in the same package. We ship via UPS within the continental United States; please provide necessary street address for delivery. Separate shipping charges are required for each shipping destination. Members, please calculate shipping charges on the full price of each item.

**Corporate Gift Programs:** We will be glad to work with your organization in developing or supplying the appropriate items for your gift or incentive programs. Please address all inquiries to the Museum Store Coordinator.

**Mail Orders:** Please address all mail orders to The Computer Museum Store, 300 Congress St., Boston, MA 02210. Payment must be included in all mail orders. Please do not enclose cash or coins. All checks or money orders should be in US dollars payable to The Computer Museum Store. Be sure to include 5% Massachusetts sales tax for all items being shipped within Massachusetts. Sorry, no COD's.

**Guarantee:** Should any item ordered through our catalog not meet your expectations, you may return it within 60 days for replacement or exchange (charge card credit when applicable). All returns should be addressed to our Customer Service Department. We are unable to accept returns shipped COD.

**Gift Certificates:** Computer Museum Store Gift Certificates are available in \$10.00 and \$25.00 denominations. Please write to our Customer Service Department for complete information.



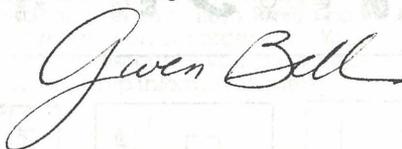
## Dear Friends of The Computer Museum:

Fall 1984 marks the exciting opening of the Museum at our new quarters on Museum Wharf in Boston. The first gallery features the largest vacuum tube computer ever built standing in contrast to today's micro equivalents. Another gallery has more than a dozen interactive exhibits on making and enhancing images with computers, as well as one-of-a-kind examples from the evolution of computer graphics.

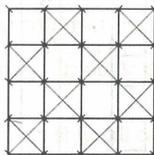
In this catalog, you will discover many new items from our new Museum Store including computer jewelry designed by artisans who work with real computer components. You will also find books, slides and original modules that allow you to have some of the Museum in your home or at work.

We hope you will enjoy our offerings, and if you are not already a member, will consider joining the Museum so you can take advantage of the 10% members discount.

Gwen Bell  
Director



**P.S.** I want to THANK YOU FOR YOUR PURCHASES from this catalog. They help support The Computer Museum and all of its educational activities.



## Membership

Join the Museum today for a 10% discount on all your catalog purchases. All members also receive a year's subscription to the Museum's quarterly magazine, invitations to openings, free admission, notification of events, priority admission to special lectures and full library privileges with access to the Museum's extensive print and video archives.

### Categories

Individual Member .....	\$30
Double Member .....	\$40
Participating Member .....	\$100
Micro Patron .....	\$250
Mini Patron .....	\$500
Mainframe Patron .....	\$1,000
Super Patron .....	\$5,000

### Benefits

- All the benefits listed above.
- Individual benefits for two people at the same address.
- Invitations to two "meet the speaker" receptions following major lectures plus Double Member benefits.
- Recognition in the Museum Report plus Participating Member benefits.
- A guided tour of the Museum by the Director plus Micro Patron benefits.
- Mainframe Patrons receive an original, signed computer-generated drawing by artist Harold Cohen plus Mini Patron benefits.
- Recognition in the Museum as a "core" contributor to the capital campaign and Mainframe Patron benefits.

To join or to give a gift membership, use the catalog order form. You can even join over the phone using your credit card, just call (617) 542-0476.

**9A-B Bumble Bytes.** Fun, lively, interactive greeting cards and games on a diskette! A smile is guaranteed from the friend who receives this greeting. No preparation, simply boot it up, answer a few questions, and view a PERSONALIZED story complete with color graphics and sound. Includes 3 games for hackers of all ages. For the Apple II, IIe, IIc. (Runs with 48K, color monitor and printer not necessary.) From Micromedia Software, a division of Oakland Group, Inc. Please specify Birthday (9B) or Christmas (9A). **\$11.95 each** (members \$10.75 each)



**9C Museum Mug & Mints.** Fine chocolates created for the Museum by award-winning confectioners. Waters of bittersweet chocolate laced with bits of crushed peppermint candy and embossed with our core memory logo. We've nestled 18 waters, each individually foil wrapped, into one of our Museum Mugs for tasty gift-giving. **\$16.00** (members \$14.40)

**9D Museum Mug.** Designed exclusively for The Computer Museum. An attractive ceramic mug from Waechtersbach to hold 12 oz. of your favorite brew. **\$7.50** (members \$6.75)



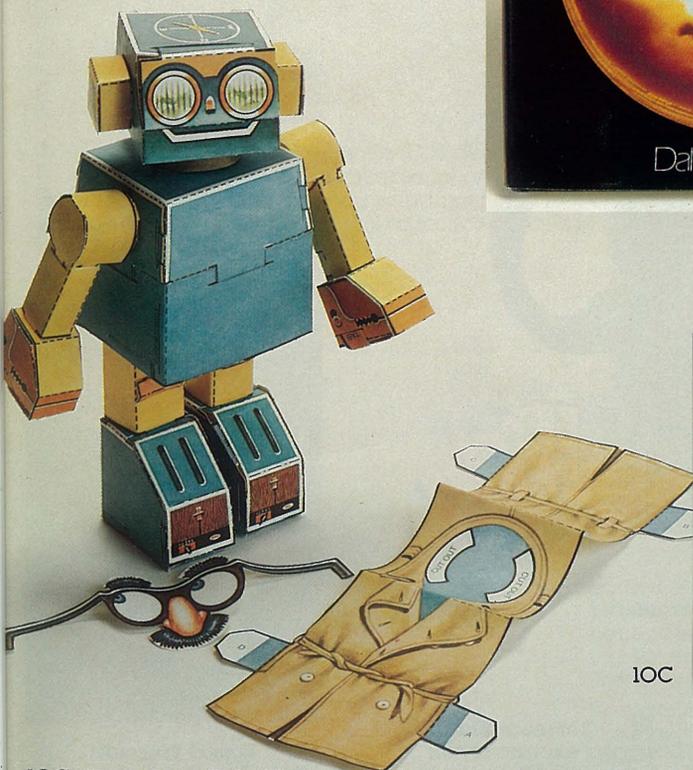
We reserve the right to refund orders for chocolate May through August.



**9E Boxed Museum Mints.** The same, delectable chocolates in an attractive gift box (30 / box). For the purist. **\$13.50** (members \$12.15)



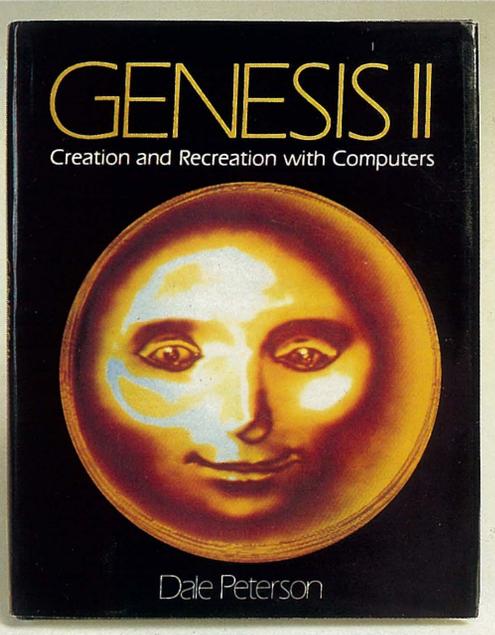
**IOA Abacus and User's Manual** "Fundamental Operations in Bead Arithmetic or How to Use a Chinese Abacus." Classic eleven column abacus in a dark wooden frame with bamboo bars, metal trim, and wooden beads. **\$6.50** (members \$5.85)



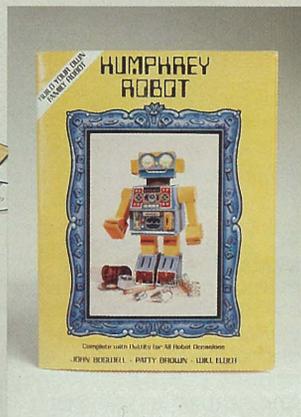
**IOC Humphrey Robot** by John Boswell, Patty Brown and Will Elder, 12 pages of die-cut patterns, 1983, Addison-Wesley. "A 3-dimension-

**IOB Genesis II: Creation and Recreation with Computers** by Dale Peterson, hardcover, 205 pages, 1983, Reston Publishing Co., Inc. "Explore the unexpected alliance of the creative arts — painting, music, literature and games — and the com-

puter. Leading the reader from the early impact of machinery on art to the present integration of computer and art, the author uses colorful examples and stories to illustrate the development of this combination." **\$25.95** (members \$23.35)

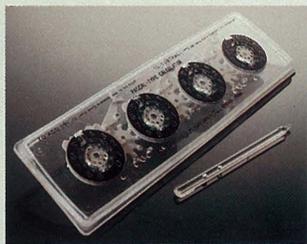


IOC

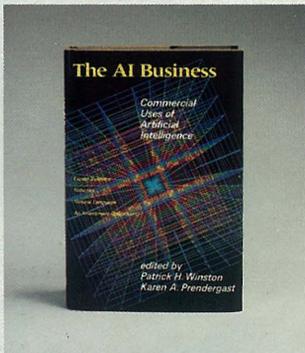


al robot, ready to cut out and assemble, Humphrey stands 12" tall and has arms and a head that move. Designed and executed

with a riotous eye for detail and fun." **\$5.95** (members \$5.35)



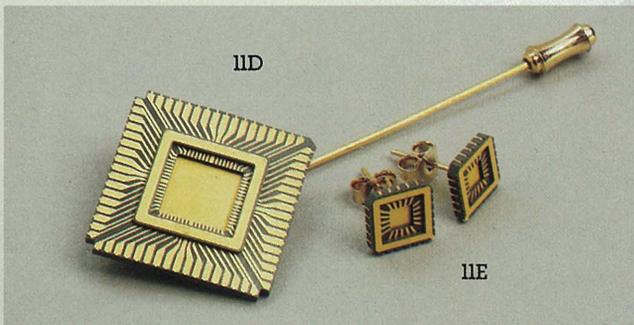
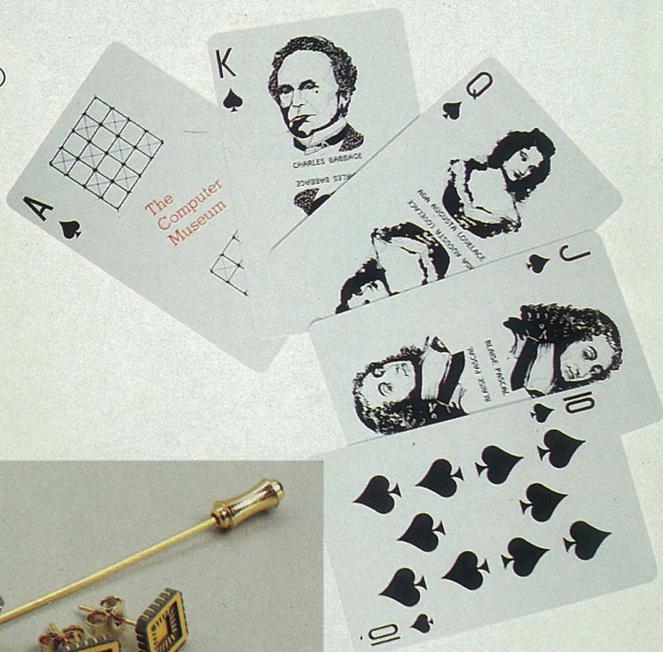
**11A See Calculator.** An 8 x 2 1/2" Pascal adder reproduced in clear Lucite. Suitable for use with overheads to explain the mechanical principles for addition invented by Pascal in 1642. Can also be used to illustrate complement arithmetic. **\$4.50** (members \$4.05)



11B

**11B The AI Business: Commercial Uses of Artificial Intelligence** ed. by Patrick H. Winston and Karen A. Prendergast, hard-cover, 50 illus., 192 pages, 1984, MIT Press. "Professionals in industry, AI researchers, and financial analysts discuss real-world applications of AI technology in the computer industry, medicine, the oil industry, and electronic design." **\$15.95** (members \$14.35)

**11C Pioneer Playing Cards.** The finest quality playing cards with a computing twist! Only here will you find Pascal a Jack, Ada Lovelace a Queen and Charles Babbage none other than the King. The back of the cards are white with an orange or grey core memory pattern. Please specify color when ordering one deck. Decks purchased in pairs will include one in each color. Another Computer Museum exclusive. **\$9.95** (members \$8.95)

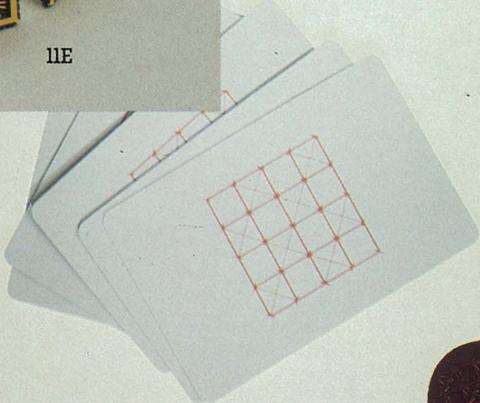


11D

11E

**11D Chip Carrier Stick Pin.** A geometric jewel. This 1" square 24K gold-plated pin features a real chip carrier. **\$18.95** (members \$17.05)

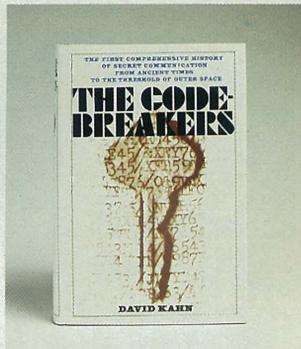
**11E Tiny Chip Carrier Post Earrings.** A stunning way to carry a computer. 5/16 x 1/4" ceramic chip carriers with 14K gold-plated edges on 14K gold filled posts. For pierced ears only. Non-returnable. **\$16.95** (members \$15.25)





12A

**12A Letter Opener.** For those items that don't come through electronic mail. A sleek, 8" stainless steel letter opener manufactured for us in Europe with a core memory pattern screened on one side, our name on the reverse. A classy complement to today's "high-tech" office. **\$7.50** (members \$6.75)

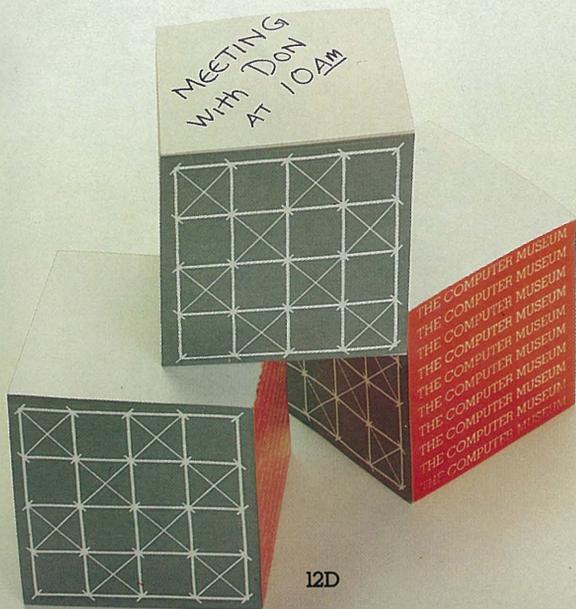


**12C The Code Breakers** by David Kahn, hardcover, 1164 pages, 1967, MacMillan. "A thrilling account of the making and breaking of methods of secret communication — the most accurate ever written." **\$39.95** (members \$35.95)



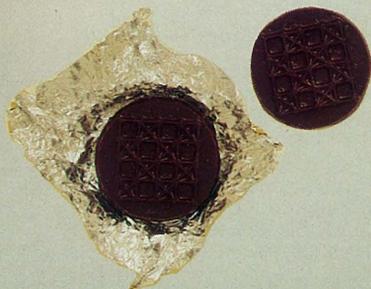
12B

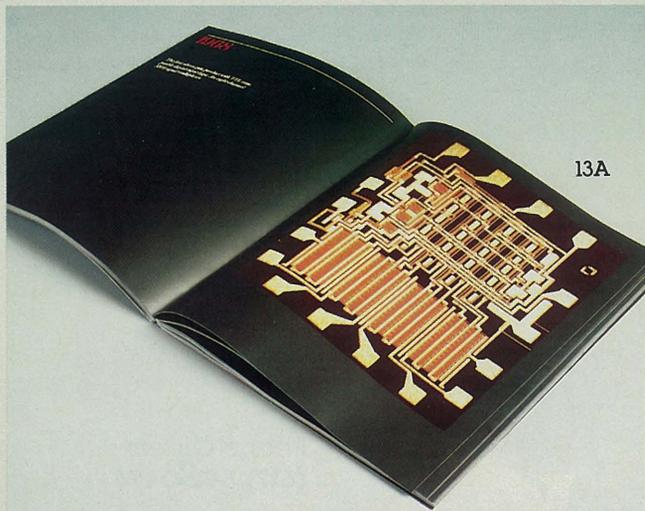
**12B Swiss Music Box.** Charming, hand-powered example of a "memory" playing a passage from Mozart's "The Magic Flute." A distinctive gift illustrating memories represented in the Museum's collection. **\$18.00** (members \$16.20)



12D

**12D Chunky Memo Pad.** For those times when electronic mail isn't handy. Use our 3 1/2" square memo cube, surrounded on three sides by a core memory pattern and, so you don't forget us, the Museum's name on the fourth side. A great addition to any desk top. **\$8.00** (members \$7.20)



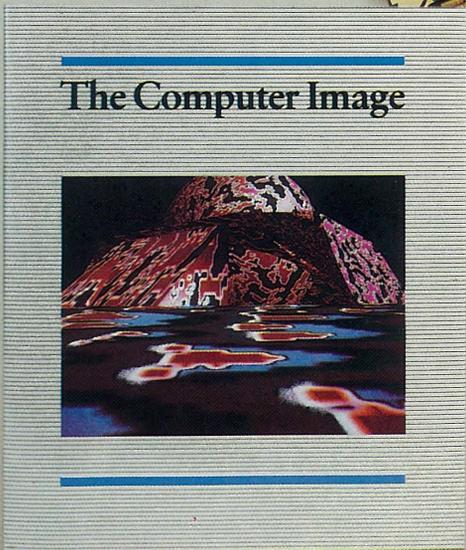


13A

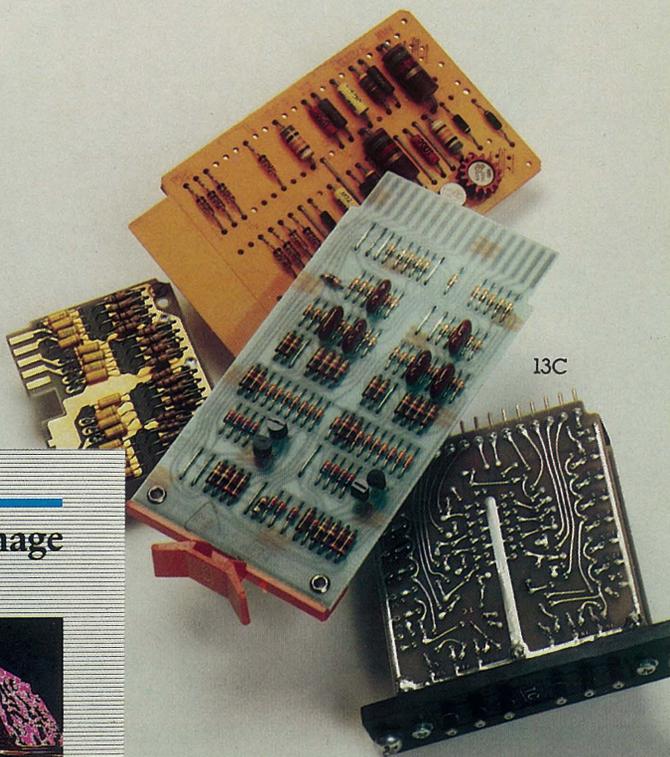
**13A A Solid State of Progress** by Fairchild Camera and Instrument Corporation vividly chronicles the evolution of silicon technology at Fairchild. 54 full-page color microphotographs of semiconductor devices from 1959 to 1979 elegantly presented on black matte pages. A must for collectors and photography enthusiasts. Only available through The Computer Museum. This year, at a special price for you. **\$6.95** (members \$6.25)

**13C Modules.** An educational and nostalgic collection of actual computer modules. Includes one each

**13B The Computer Image: Application of Computer Graphics** by Donald Greenburg, Aaron Marcus, Allan H. Schmidt and Vernon Gortner. Hardcover, 128 pages, Addison-Wesley. "This book explores the latest developments in computer graphics for business, fine arts, animation, design, modeling, drafting, and more. A total of 120 photographs highlight this elegant, state-of-the-art overview." **\$27.95** (members \$25.15)

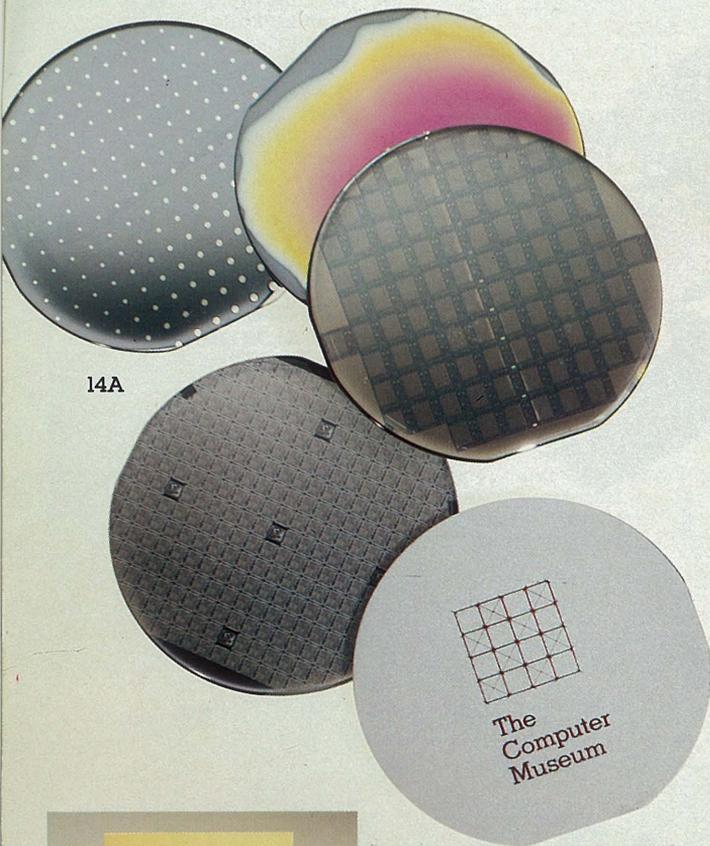


13B



13C

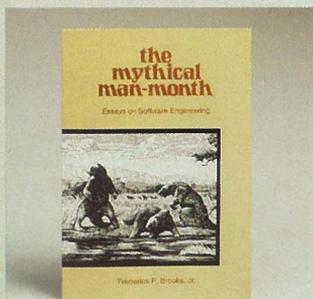
of the following: an IBM SMS module, a module from a PDP-8, an early Digital Equipment Corporation computer, a Control Data 6600 module of unusual "cord wood construction," and a Philco 212 module from 1958. Modules and circuit boards may vary slightly. **\$19.95** (members \$17.95)



14A

**14A Silicon Wafers.** We've taken 4" diameter silicon wafers, screened our name on the back, and preserved the front with a thin, smooth layer of epoxy. A super momento or the ultimate "techie" coaster. Designs vary, please let us choose for you. **2 for \$11.95** (members, 2 for \$10.75)

Phone Orders  
**(617) 542-0476**

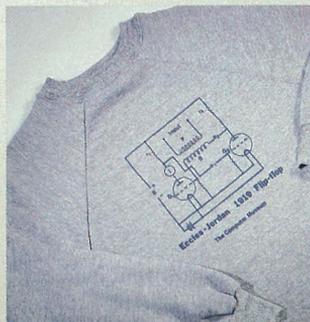


**14B The Mythical Man-month: Essays on Software Engineering** by Frederick P. Brooks, Jr., paperbound, 195 pages, Addison-Wesley. "An eminent computer expert, Brooks has written a collection of thought-provoking essays on the management of computer programming projects. These essays draw from his own experience as project manager for the IBM System/360 and for the OS/360, its operating system." **\$12.95** (members \$11.65)

**14C Flip-flop Shirts.** Wear a page out of computer history! Invented in 1919, this circuit was the first high-speed electronic storage device. Eccles-Jordan flip-flop silk-screened in navy blue on heather grey sweatshirt (14C) (38% cotton, 50% polyester, 12% rayon). Adult sizes only. S(34-36), M(38-40), L(42-44), XL(46-48). **\$17.95** (members \$16.15)

**14D** Also available as a short-sleeved T-shirt. White silk-screened on a red shirt (50% cotton, 50% polyester). Adult sizes only, see above. **\$7.95** (members \$6.15)

14C



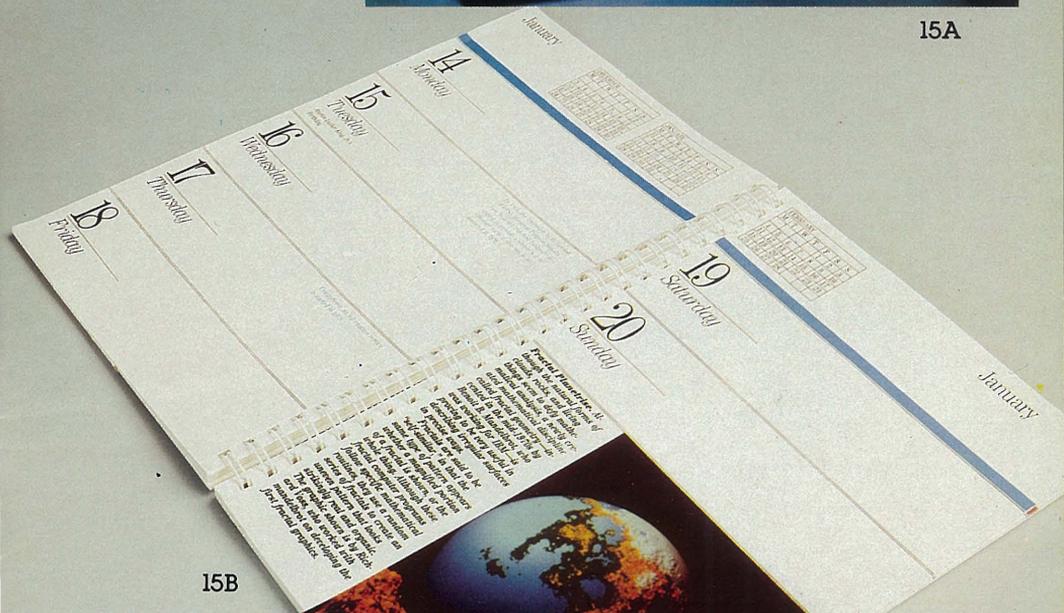
14D

**15A Chocolate Chip.** A 54 gram bar of the finest Belgian chocolate. This elegantly presented, edible, integrated circuit will delight even the finickiest hacker.

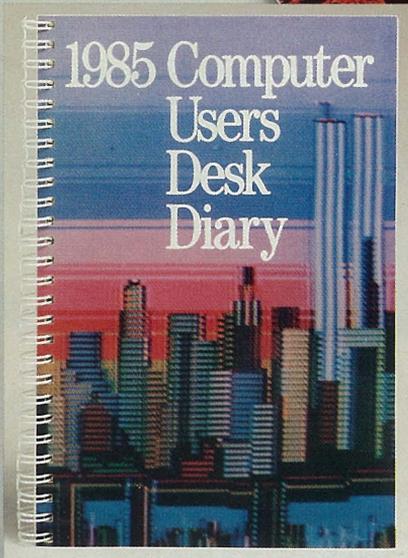
Available Oct. 15, 1984. (We reserve the right to refund orders for chocolate May through August.) **\$5.95** (members \$5.35)



15A

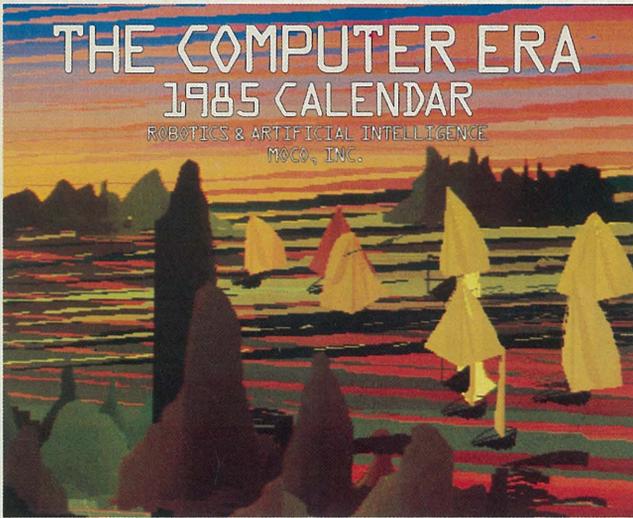


15B



**15B 1985 Computer User's Desk Diary** by Gil Roeder and Jason A. Shulman, 128 pages, 6 x 9" spiralbound, Workman Publishing. "A weekly appointment book and planning guide packed with photos, facts, important dates, even conversion tables. Full-color photos, charts and diagrams throughout. **\$8.95** (members \$8.05)





**16A An Intelligent Calendar for 1985.** An edition published especially for us by Tab Books. A full-color, spiral bound 12-month calendar graphically illustrat-

ing robotics and artificial intelligence. Includes dates for 1985 computer conferences. Spread size: 12 x 18". **\$6.95** (members \$6.25)



**16B Ada and Pascal.** We put their mugs on yours. Have your morning coffee break with pioneers of computing history. Handsome, ceramic mugs hold 12 oz. of your strongest brew. Each pair features one Ada and one Pascal mug. Cobalt blue screened on white. For the office or kitchen. Sorry, no substitutions. **\$13.95 the pair** (members \$12.55 the pair)

## The Computer Museum

300 Congress Street  
Boston, MA 02210

Non-Profit  
Organization  
U.S. Postage  
**PAID**

The Computer Museum  
Permit No. 587

Elizabeth Feinier  
SRI International, Room EJ221  
333 Ravenswood Ave.  
Menlo Park, CA 94025