The
Computer
Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

Memorandum

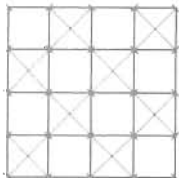DATE: June 21, 1994

TO: Board of Trustees
            Board of Overseers

FROM: Oliver Strimpel

SUBJECT: Board of Trustees Meeting on June 17

For those of you who were unable to attend the Annual Meeting and the Board of Trustees meeting on Friday, June 17, I enclose Board packets for your information.

I wish you all a good summer!

The
Computer
Museum

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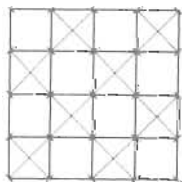
(617) 426-2800

The Computer Museum

BOARD OF DIRECTORS MEETING
Friday, June 17, 1994
8:30 a.m. - 12:00 p.m.

Agenda

8:30   Call to Order of Meeting of the Members of the Corporation

Election of Vice Chairman
Election of New Trustees

Meeting Adjourns

Call to Order of Meeting of the Board of Trustees

Election of Officers
Election of Standing Committees
Election of New Overseers

FY94 Review and Goals for FY95
    Budget Discussion

Capital Campaign Discussion

Bowl Report

Operating Committee Reports

Long-Range Planning: Three-Year Plan

12:00   Meeting Adjourns

Lunch

The Computer Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

MEMORANDUM

TO: Board of Directors
The Computer Museum

FROM: Lynda S. Bodman
Chairman, Nominating Committee

DATE: 16 June, 1994

SUBJECT: Election of Candidates for Overseers/Trustees

Nominating Committee motions for June 17:

For election to the Board of Overseers

- Gary J. Beach, President and CFO, CW Publishing Inc. and Publisher of *Computerworld*
- Clemmie L. Cash, President, Tarrek Gems and Children Services Leader
- Steve Coit, Vice Chairman, Charles River
- Isaac R. Nassi, Vice President of the Development Products Group, Apple Computer, Inc.
- John Shoch, Partner, Asset Management
- Allan L. Wallack, Member of the Board of Directors, Applied Intelligence Systems, Inc.

- In addition, the Committee asks acceptance of the resignation of Barry Horowitz from the Board of Trustees and the election of Barry to the Board of Overseer.

For election as Chairman of the Board of Overseers
- David Nelson

For re-election to the Board of Trustees
- Edward Belove
- Gardner C. Hendrie
- Charles House
- David B. Kaplan
- Nicholas A. Pettinella
- F. Grant Saviers
- Michael Simmons
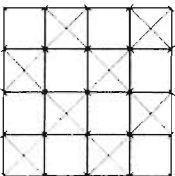
The Computer Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

NOMINATION FORM

Submitted By

NOMINATED FOR:

Nominator: _____

Trustee:____

Telephone (Day): _____

Honorary Trustee:____

Date Submitted: _____

Overseer:____

Nominee's Name: _____

Home Address: _____

_____

Home Phone: (_____) _____Fax: _____

Business Title: _____

Company: _____

Address: _____

Business Phone: ..(_____) _____Fax: _____

Professional Affiliations/Activities/Interests:_____

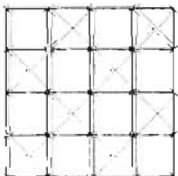_____

_____

Education:_____

_____

Non-Profit/Community Experience/Interests:_____

_____

_____

Knowledge Of/Interest In The Computer Museum:_____

_____

Strengths or Expertise Candidate Brings to The Computer Museum:_____

_____

_____

_____

Your Name_____ Date_____

Return Completed Form to: Betsy Riggs, The Computer Museum

COMPUTERWORLD

Gary J. Beach

President and Chief Executive Officer
CW Publishing Inc.

Publisher
Computerworld

President and CEO of CW Publishing Inc., Framingham, Massachusetts, and publisher of *Computerworld*, Gary J. Beach joined the International Data Group family of newspapers and magazines as publisher of *Network World* in 1987. In 1991, he was named publisher of *Computerworld*, the industry's newspaper of record for information systems management.

As publisher of a weekly newspaper that reaches more than 600,000 key IS decision makers he is active in promoting efforts that raise the information technology industry's awareness of social responsibility, including advocacy of computer literacy among the general public.

Clemmie L. Cash
President
Tarrek Gems

Ms. Cash, currently a resident of Wellesley, Massachusetts, was born in Tyler, Texas - the oldest of seven children. At the age of nine, her family moved to Fort Worth, Texas where she graduated from M. L. Kirkpatrick High School. She received a Bachelor of Arts degree in Sociology from the University of Texas at Arlington. After graduation she worked as manager of the West Dallas Community Center. Later, during graduate study at Oklahoma State University, she taught for two years at Langston University, Langston Oklahoma.

Her exposure to business began in 1973 when she worked as Credit Manager for a Montgomery Ward store in West Lafayette, Indiana. Between 1976 and 1981 she was responsible for international distribution to the Far East for New England Nuclear, a radioactive labeled pharmaceutical and chemical research company. Tarrek Gems was founded in 1987 after several trips to Asia caused Ms. Cash to believe there was a market for home-based personal consulting, design and sales of pearls and precious gems.

In addition to her work life she has been actively involved in a range of community service activities. Among these, The Wellesley ABC Program, The Noble and Greenough Board of Trustees, Massachusetts Society for the Prevention of Cruelty to Children (MSPCC) Family Affair Committee and several roles at the Tenacre Country Day School of Wellesley, consume the majority of her time. Her leisure time activities include tennis and traveling.

Ms. Cash's family includes two children - Tari age 18 (Trinity College freshman) and Derek age 11 (a sixth grader at Tenacre), and her husband, James I. Cash, Jr.

June, 1994

STEPHEN E. COIT
Partner
Charles River Ventures
Ten Post Office Square
Boston, MA 02109
TEL: 617/292-7717
FAX: 617/292-7718

Stephen E. Coit joined Charles River Ventures in March, 1994. For the past 10 years, Mr. Coit has been General Partner of Merrill, Pickard, Anderson & Eyre, based in Menlo Park, CA. Since 1987, he managed the firm's East Coast office. Prior to his career in venture capital, he worked in various management capacities in technology-oriented companies, including Vice President, Marketing at Raster Technologies, Inc., International Marketing Manager at Prime Computer, Inc., Product Manager at Hewlett-Packard Corporation, and Senior Programmer at Searle Medidata, Inc. Guided by his strong operational background, Mr. Coit has made a number of successful investments in the technology and medical fields. Representative investments include MIPS Computer Systems Inc., PictureTel Corporation, Synernetics Inc., and Synopsys, Inc. He currently serves as an active board member of International Data Group, a private, diversified publishing company for the information technology industry with revenues approaching $1 billion. Mr. Coit earned his M.B.A. from Harvard Business School (1977), where he was a Baker Scholar, and received his A.B. in Computer Sciences from Harvard College (1971).

June 15, 1994

Ike Nassi (Isaac R. Nassi, Ph.D.)

Dr. Nassi has extensive experience in programming languages and systems, computer architecture, and distributed systems. After getting his Ph.D. in Computer Science in 1974 from the State University of New York at Stony Brook, he joined SofTech as a software Engineer. He moved to Digital Equipment Corporation to help design a programming language and a family of compilers, and new software engineering techniques for use on what became the VAX architecture.

While at DEC, he started to work on the design of a new programming language, at the request of the Department of Defense. This language ultimately became Ada, and Dr. Nassi received a Certificate for Distinguished Service from the Undersecretary of Defense for his contributions.

Later, Dr. Nassi helped to start Encore Computer, where he held the post of Vice President of Research. At Encore, he was the principal investigator for a research project sponsored by the Defense Advanced Research Projects Agency (DARPA) to develop general purpose shared memory multiprocessor capable of delivering 1000 MIPS. An early prototype of this system was demonstrated to DARPA in May, 1989.

As Director of Research and Technology for Apple Computer, Dr. Nassi started Apple's Cambridge R&D Center in 1989. In Cambridge, Apple has designed a new object oriented dynamic programming language called Dylan.

Dr. Nassi currently holds the position of Vice President of the Development Products Group at Apple. In addition, he is a consultant to the Department of Defense's ARPA/ISAT committee, and was recently appointed as a Visiting Scholar at Stanford University.

John Shoch
Partner
Asset Management

John has a Ph.D. in Computer Science from Stanford and is past head of Xerox's Palo Alto Research Center. He has been an active member of the West Coast Computer Bowl Committee, and has supported the Bowl and given to the Capital Campaign. He is an active fund-raiser for a number of non-profits, and understands the fund-raising role of non-profit Board members. With Bowl coming to an end, his continued involvement requires getting him actively tied into the Museum itself.

Allan L. Wallack
67 Thompson Dr.
Sudbury, MA 01776
508-443-5449

1993 – Present   Member of Board of Directors-Applied Intelligence Systems Inc.

1990 – 1994   Chief Executive Officer and President – Synernetics Inc.

Joined Synernetics, a two year old communications company that had not yet achieved revenue and was facing a series of issues stemming from a lack of strategic market direction, business skills, experience and leadership.The company ended 1993 profitably with $27.3 million in revenue Synernetics achieved market leadership in Ethernet Switching (Dataquest-December 1993), technology leadership in performance, and was successfully sold to 3Com Corp. in January 1994, for approximately four times trailing 1993 revenues.

1986 – 1990   Chief Operating Officer – COGNEX CORP.

Joined COGNEX, a five year old $4 million failing machine vision company that lost $2.5 million in profits in 1985. The company reported to me and I reported to the Chairman. The net result of my tenure was a public company with three years of profitability, industry leadership and a strategic plan for continued domination and growth. Today, the company is still extremely successful and is recognized as the industry leader.

1982 –1985   Vice President of Marketing – MASSCOMP

Joined MASSCOMP, a seven month old scientific computer company, to provide the marketing and business leadership required to build a successful company. The net result was $45 million in revenue, an IPO, and a strong and successful marketing organization.

1980 – 1982   Group Operations Mgr, Manufacturing Market Group
                      Digital Equipment Corporation

Joined MDC, a $200 million product group, to provide leadership in market and sales direction, and increase profits to corporate acceptable levels. The results were a profit increase from under 2% PBT to over 11%, and a new organization focused on applications and industries.

1978 – 1980   Group Marketing Mgr, Laboratory Data Products Group
                      Digital Equipment Corporation

Responsibilities, for a then $210 million product group, included new ventures, joint marketing programs, market development and strategic planning, product management, Major achievements included creating a new profitable $30 million business, a formal strategic planning process and a successful organization

1970 – 1978   Various positions , LDP Group, Digital Equipment Corporation

              Product Line Marketing Manager (1977 – 1978)
              Small Systems Marketing Manager (1975 – 1976)
              Engineering Manager (1973 – 1974)
              Engineering Supervisor (1972)
              Project Engineer (1970 – 1971)

Education

Executive Programs	Whittemore School, Various DEC programs
MSEE	Northeastern 1973 (evenings)
BSEE	CCNY 1970
USAF	1964 – 1968

FY95 Calendar of Events

Date	Event
1994	
Jun/Jul	World Cup Soccer Kiosk
Jul 1-3	Harborfest: Computer Animation Festival
Jul 16-Sep 5	From Drawing to Montage: Computers in Art
August 15-25	Human vs Computer Checkers Tournament
Sept 24-Nov 27	The Computer in the Studio (with DeCordova Museum)
Oct 1-2	Harvard Cup: Human vs. Computer Chess Challenge
Nov 10	Networked Planet VIP Opening
Nov 12	Networked Planet Public Opening

FY95 Calendar of Events
(continued)

Date	Event
1995	
Feb	Computer Animation Month
Mar 18- May 22	Aaron in Color: Robotic Painter
April 28	Computer Bowl 2.0
June	Walk-Through Computer 2.0

THE COMPUTER MUSEUM
STATEMENT OF REVENUE & EXPENSE
11 Month Ending 05/31/94

	OPERATING FY94 Actual	Budget	CAPITAL Actual	Budget	EXHIBIT Actual	Budget	ENDOWMENT Actual	Budget	COMBINED Actual	Budget	$ VARIANCE	ANNUAL BUDGET FY94	FORECAST FY94
SUPPORT/REVENUE													
Restricted Support:													
Clubhouse	220,925	279,225							220,925	279,225	-58,300	287,900	237,800
Exhibit Related	86,697	91,200			138,039	577,000			224,736	668,200	-443,464	732,000	538,313
Govt & Foundation	2,982								2,982		2,982		7,982
Endowment									·				
Unrestricted Support:													
Capital Campaign			154,683	511,700					154,683	511,700	-357,017	726,200	284,683
Corporate Membership	160,575	172,200							160,575	172,200	-11,625	205,000	193,050
Foundation	29,180								29,180		29,180		24,180
Computer Bowl	364,951	386,000							364,951	386,000	-21,049	388,000	438,000
Membership Fund	168,337	157,240							168,337	157,240	11,097	178,000	185,000
Admission	451,131	483,243							451,131	483,243	-32,112	536,841	502,000
Store	241,256	303,734							241,256	303,734	-62,478	332,395	262,000
Functions	169,198	120,780							169,198	120,780	48,418	140,352	177,000
Exhibit Sales	17,997	80,000							17,997	80,000	-62,003	90,000	17,997
Other:													
Interest Income	3,078	6,400					6,382	6,435	9,460	12,835	-3,375	12,000	9,000
Rental Income												4,000	
Program Income		2,200								2,200	-2,200	2,500	200
Collections	350	3,600							350	3,600	-3,250	4,000	350
TOTAL SUPPORT/REVENUE	1,916,657	2,085,822	154,683	511,700	138,039	577,000	6,382	6,435	2,215,761	3,180,957	-965,196	3,639,188	2,877,555
EXPENSES													
Exhibit Development	56,530	93,875			207,454	426,394			263,984	520,269	-256,285	580,485	441,800
Exhibit Maint/Enhancement	50,927	39,433			2,204	24,057			53,131	63,490	-10,359	69,578	56,700
Exhibit Sales/Kits	35,765	46,940							35,765	46,940	-11,175	52,610	38,000
Collections	60,092	57,120							60,092	57,120	2,972	62,400	65,000
Education & Admission	241,856	268,395							241,856	268,395	-26,539	292,570	267,000
Clubhouse	169,942	216,120							169,942	216,120	-46,178	236,000	182,942
Marketing	224,410	211,105							224,410	211,105	13,305	229,190	245,000
Public Relations	84,663	85,751							84,663	85,751	-1,088	93,334	91,455
Store	207,144	247,452							207,144	247,452	-40,308	268,932	223,000
Functions	77,462	62,801							77,462	62,801	14,661	69,402	83,900
Computer Bowl	130,149	132,770							130,149	132,770	-2,621	135,324	137,600
Fundraising	55,690	59,755	118,427	198,064					174,117	257,819	-83,702	286,585	187,090
Membership Fund	44,089	76,650							44,089	76,650	-32,561	83,611	48,600
Museum Wharf													
Op Exp	282,811	276,837							282,811	276,837	5,974	302,000	310,000
Mortgage			116,655	116,651					116,655	116,651	4	126,977	126,977
General Management	241,437	197,454							241,437	197,454	43,983	213,271	262,000
TOTAL EXPENSE	1,962,967	2,072,458	235,082	314,715	209,658	450,451			2,407,707	2,837,624	-429,917	3,102,269	2,767,064
NET REVENUE	-46,310	13,364	-80,399	196,985	-71,619	126,549	6,382	6,435	-191,946	343,333	-535,279	536,919	110,491

THE COMPUTER MUSEUM
STATEMENT OF REVENUE & EXPENSE
11 Month Ending 05/31/94

	OPERATING FY94 Actual	OPERATING FY94 Budget	OPERATING FY93 Actual	CAPITAL/EXHIBIT Actual	CAPITAL/EXHIBIT Budget	ENDOWMENT Actual	ENDOWMENT Budget	COMBINED Actual	COMBINED Budget	$ VARIANCE	ANNUAL BUDGET FY94	FORECAST FY94
SUPPORT/REVENUE												
Restricted Support:												
Clubhouse	220,925	279,225	54,195					220,925	279,225	-58,300	287,900	237,800
Exhibit Related	86,697	91,200	30,000	138,039	577,000			224,736	668,200	-443,464	732,000	538,313
Govt & Foundation	2,982		30,000					2,982	.	2,982		7,982
Endowment												
Unrestricted Support:												
Capital Campaign				154,683	511,700			154,683	511,700	-357,017	726,200	284,683
Corporate Membership	160,575	172,200	164,250					160,575	172,200	-11,625	205,000	193,050
Foundation	29,180		1,000					29,180		29,180		24,180
Computer Bowl	364,951	386,000	319,210					364,951	386,000	-21,049	388,000	438,000
Membership Fund	168,337	157,240	118,971					168,337	157,240	11,097	178,000	185,000
Admission	451,131	483,243	439,362					451,131	483,243	-32,112	536,841	502,000
Store	241,256	303,734	209,519					241,256	303,734	-62,478	332,395	262,000
Functions	169,198	120,780	132,621					169,198	120,780	48,418	140,352	177,000
Exhibit Sales	17,997	80,000	49,240					17,997	80,000	-62,003	90,000	17,997
Other:												
Interest Income	3,078	6,400	3,081			6,382	6,435	9,460	12,835	-3,375	12,000	9,000
Rental Income			5,950								4,000	
Program Income		2,200	6,092						2,200	-2,200	2,500	200
Collections	350	3,600	5,577					350	3,600	-3,250	4,000	350
TOTAL SUPPORT/REVENUE	1,916,657	2,085,822	1,569,068	292,722	1,088,700	6,382	6,435	2,215,761	3,180,957	-965,196	3,639,188	2,877,555
EXPENSES												
Exhibit Development	56,530	93,875	38,927	207,454	426,394			263,984	520,269	-256,285	580,485	441,800
Exhibit Maint/Enhancement	50,927	39,433	57,599	2,204	24,057			53,131	63,490	-10,359	69,578	56,700
Exhibit Sales/Kits	35,765	46,940	50,424					35,765	46,940	-11,175	52,610	38,000
Collections	60,092	57,120	56,040					60,092	57,120	2,972	62,400	65,000
Education & Admission	241,856	268,395	231,789					241,856	268,395	-26,539	292,570	267,000
Clubhouse	169,942	216,120	41,688					169,942	216,120	-46,178	236,000	182,942
Marketing	224,410	211,105	152,826					224,410	211,105	13,305	229,190	245,000
Public Relations	84,663	85,751	75,460					84,663	85,751	-1,088	93,334	91,455
Store	207,144	247,452	193,675					207,144	247,452	-40,308	268,932	223,000
Functions	77,462	62,801	57,434					77,462	62,801	14,661	69,402	83,900
Computer Bowl	130,149	132,770	102,339					130,149	132,770	-2,621	135,324	137,600
Fundraising	55,690	59,755	45,839	118,427	198,064			174,117	257,819	-83,702	286,585	187,090
Membership Fund	44,089	76,650	31,891					44,089	76,650	-32,561	83,611	48,600
Museum Wharf												
Op Exp	282,811	276,837	270,698					282,811	276,837	5,974	302,000	310,000
Mortgage				116,655	116,651			116,655	116,651	4	126,977	126,977
General Management	241,437	197,454	205,230					241,437	197,454	43,983	213,271	262,000
TOTAL EXPENSE	1,962,967	2,072,458	1,611,859	444,740	765,166			2,407,707	2,837,624	-429,917	3,102,269	2,767,064
NET REVENUE	-46,310	13,364	-42,791	-152,018	323,534	6,382	6,435	-191,946	343,333	-535,279	536,919	110,491

06/14/94

THE COMPUTER MUSEUM
STATEMENT OF REVENUE & EXPENSE
OPERATING FUND

	05/31/93 ACTUAL	FOR THE ELEVEN MONTHS ENDED ---------05/31/94--------- ACTUAL	BUDGET	VARIANCE	PERCENT	FY94 BUDGET	FY94 FORECAST
REVENUES:							
Clubhouse	54,195	$220,925	279,225	-58,300	-21%	287,900	237,800
Exhibit Related	30,000	86,697	91,200	-4,5Q3	-5%	100,000	98,313
Govt & Foundation	31,000	$32,162		32,162	100%		32,162
Corporate Membership	164,250	$160,575	172,200	-11,625	-7%	205,000	193,050
Computer Bowl	319,210	$364,951	386,000	-21,049	-5%	388,000	438,000
Membership Fund	118,971	$168,337	157,240	11,097	7%	178,000	185,000
Admissions	439,362	$451,131	483,243	-32,112	-7%	536,841	502,000
Store	209,519	$241,256	303,734	-62,478	-21%	332,395	262,000
Functions	132,621	$169,198	120,780	48,418	40%	140,352	177,000
Exhibit Sales	49,240	$17,997	80,000	-62,003	-78%	90,000	17,997
Interest Income	3,081	$3,078	6,400	-3,322	-52%	7,000	9,000
Other	17,619	350	5,800	-5,450	-94%	10,500	550
Total Revenues	1,569,068	1,916,657	2,085,822	(169,165)	-8%	2,275,988	2,152,872
EXPENSES:							
Exhibits Development	38,927	56,530	93,875	-37,345	-66%	102,730	60,300
Exhibits Maintenance	57,599	50,927	39,433	11,494	23%	43,250	56,700
Exhibit Sales	50,424	35,765	46,940	-11,175	-31%	52,610	38,000
Collections	56,040	60,092	57,120	2,972	5%	62,400	65,000
Education & Admissions	231,789	241,856	268,395	-26,539	-11%	292,570	267,000
Clubhouse	41,688	169,942	216,120	-46,178	-27%	236,000	182,942
Marketing	152,826	224,410	211,105	13,305	6%	229,190	245,000
Public Relations	75,460	84,663	85,751	-1,088	-1%	93,334	91,455
Store	193,675	207,144	247,452	-40,308	-19%	268,932	223,000
Functions	57,434	77,462	62,801	14,661	19%	69,402	83,900
Computer Bowl	102,339	130,149	132,770	-2,621	-2%	135,324	137,600
Fundraising	45,839	55,690	59,755	-4,065	-7%	64,854	60,000
Membership Fund	31,891	44,089	76,650	-32,561	-74%	83,611	48,600
Musuem Wharf	270,698	282,811	276,837	5,974	2%	302,000	310,000
General Management	205,230	241,437	197,454	43,983	18%	213,271	262,000
Total Expenses	1,611,859	1,962,967	2,072,458	-109,491	-6%	2,249,478	2,131,497
NET REVENUES(EXPENSES)	($42,791)	($46,310)	13,364	-59,674	-4	26,510	21,375

THE COMPUTER MUSEUM
BALANCE SHEET
05/31/94

	OPERATING FUND	CAPITAL FUND	PLANT FUND	ENDOWMENT FUND	COMBINED TOTAL 05/31/94	TOTAL 6/30/93
ASSETS:						
Current:						
Unrestricted Cash	$193,505	-	-	$6,382	$199,887	$259,423
Restricted Cash	-	-	-	250,000	$250,000	250,000
Cash Equivalents	-	-	-	-		167
Investments	150,000	-	-	-	$150,000	2,074
Receivables	212,301	-	-	-	$212,301	48,868
Inventory	49,583	-	-	-	$49,583	49,137
Prepaid Expenses	17,497	-	-	-	$17,497	9,143
Interfund Receivable	6,382	506,709	-	-	$513,091	123,310
Total Current Assets	$629,268	$506,709		$256,382	$1,392,359	$742,122
Property & Equipment:						
Equipment & Furniture	-	-	$260,327	-	$260,327	$260,327
Capital Improvements	-	-	938,338	-	938,338	938,338
Exhibits	-	-	4,079,698	-	4,079,698	4,079,698
Construction in Process	-	52,908	-	-	52,908	52,908
Land	-	-	18,000	-	18,000	18,000
Less Accum. Depreciation	-	-	(2,962,311)	-	(2,962,311)	(2,962,311)
Net Property & Equipment		$52,908	$2,334,052		$2,386,960	$2,386,960
TOTAL ASSETS	$629,268	$559,617	$2,334,052	$256,382	$3,779,319	$3,129,082
LIABILITIES AND FUND BALANCES:						
Current:						
Accounts Payable	$94,522	$7,484	-	-	$102,006	$109,006
Accrued Expense	50,751	8,710	-	-	59,461	63,557
Deferred Income	125,780	532,637	-	-	658,417	194,919
Interfund Payable	506,709		-	6,382	506,709	123,310
Total Current Liabilities	$777,762	$548,831		$6,382	1,326,593	$490,792
Fund Balances:						
Operating	($148,494)	-	-	-	(148,494)	($108,566)
Capital	-	10,786	-	-	10,786	162,804
Endowment	-	-	-	250,000	250,000	250,000
Plant	-	-	2,334,052	-	2,334,052	2,334,052
Total Fund Balances	($148,494)	$10,786	$2,334,052	$250,000	$2,446,344	$2,638,290
TOTAL LIABILITIES AND FUND BALANCES	$629,268	$559,617	$2,334,052	$256,382	$3,779,319	$3,129,082

THE COMPUTER MUSEUM
PROJECT REPORT
AS OF 5/31/94

PROJECT: NETWORKED SOCIETY
TOTAL ESTIMATED PROJECT COST   650,000

	TOTAL	FY93	FY94
CASH COLLECTED			
Corporate Contributions	395,000 ·		395,000
Foundation Grants	100,304	50,000	50,304
Total	495,304	50,000	445,304

REPORTED AS REVENUES & EXPENSES

	TOTAL	FY93	FY94
REVENUES	212,886	50,000	162,886
EXPENSES			
Personnel Expense	117,195	18,823	98,372
Administrative Expense	9,859	2,163	7,696
New Exhibit Production	32,059	64	31,995
Overhead (18%)	53,773	28,950	24,823
Total	212,886	50,000	162,886
Fund Balance (Deferred Revenue)	282,418		282,418
Expenses and fund balance	495,304	50,000	445,304

COMMITTED PLEDGES (Cash not received)

Stratus	20,000
Welfleet	25,000
HCHP	25,000
Hewlett Packard	25,000
SWIFT	100,000
Total	195,000

PROPOSALS PENDING

Thompson Financial	25,000
Nat'l Science Foundation	500,000
Unysis	50,000
Apple	50,000
Sprint	100,000
Banyan	50,000
Intel	100,000
Chipcom	100,000
	975,000

6/14/94

PROJECT: THE COMPUTER CLUBHOUSE

TOTAL ESTIMATED PROJECT COST   623,739

	TOTAL	FY93	FY94
CASH COLLECTED			
Corporate Contributions	349,501	222,951	126,550
Foundation Grants	30,000	30,000	
Total	379,501	252,951	126,550

REPORTED AS REVENUES & EXPENSES

	TOTAL	FY93	FY94
REVENUES	297,297	76,372	220,925
EXPENSES			
Personnel Expense	175,474	41,822	133,652
Administrative Expense	43,056	14,277	28,779
New Exhibit Production	16,647	9,107	7,540
Overhead (30%)	62,120	11,166	50,954
Total	297,297	76,372	220,925

Fund Balance (Deferred Revenue)   82,204

    Expenses and fund balance   379,501

COMMITTED PLEDGES (Cash not received)

Intel Foundation	50,000
Fleet Bank	5,000
Lotus	25,000
Stride Rite	5,000
Stop & Shop	25,000
Total:	110,000

06/15/94

CAPITAL CAMPAIGN REPORT
For the Period January 1991 through June 30, 1995
($ Thousands)

DESCRIPTION	ACTUAL TO DATE	FORECAST THRU FY94	PROJECTION THRU FY95	WEBB PLAN
PLEDGES:				
Cash	$1,600	$1,600	$1,600	$5,000
Building - DEC	2,500	2,500	2,500	2,500
Bell CRT (1)	1,000	1,000	1,000	0
Total Pledges	5,100	5,100	5,100	7,500
PLEDGES REALIZED:				
Cash	1,274	1,404	1,512	5,000
Building - DEC	2,500	2,500	2,500	2,500
Total Pledges Realized	3,774	3,904	4,012	7,500
Less Transfers:				
To Endowment Fund	250	250	250	3,500
To Plant Fund	2,500	2,500	2,500	2,500
Total Transfers	2,750	2,750	2,750	6,000
Pledges Realized for Expenses	1,024	1,154	1,262	1,500
EXPENSES:				
Webb Study Plan	71	71	71	71
Fundraising Costs	476	485	490	908
Mortgage	401	401	521	521
Total Expenses	948	957	1,082	1,500
PLEDGES REALIZED NET OF EXPENSES:	76	197	180	0
PLEDGES NOT YET REALIZED:				
Cash	326	196	88	
Bell CRT	1,000	1,000	1,000	0
	1,326	1,196	1,088	0

(1) Represents Charitable Remainder Trust pledged in 1991. Upon Donor's death, remaining value of the trust shall be paid to the Museum. During the remaining life of the Donor, the Trust is obligated to make payments each year to the Donor equal to 10% of the net fair market value of the Trust assets. The market value of the Trust as of August 25, 1993 was 1,442.

The Computer Clubhouse needs you!

The Computer Museum's Computer Clubhouse is a model learning environment for underserved youth ages 10-16. We are looking for mentors and youth to work together to develop these exciting projects and more...

1. **Interactive Multimedia Newsmagazine ·**
    Create and manage a newspaper written by youth for youth that includes, video, text, graphics and sound and allows the reader to chose their own path of discovery. This magazine will be accessible by schools over nternet.

2. **Computer Based Art Gallery**
    Produce computer based works of art to be shown in a virtual art gallery that will be accessible over the Internet using Mosaic.

3. **Computer Controlled Devices**
    Build computer interfaces to control vehicles and other devices through a direct or wireless link. Make sensors for light, temp, touch, distance, for these devices. Create programs in Basic, Visual Basic, C and Visual C to run these devices. Design a controller for a 6 stepper motor for a Microbot Alpha II.

4. **Virtual Reality**
    Create VR devices or modifying already existing devices for VR. Design an interface to attach a Nintendo Power Glove to a computer and create software to respond to it.

5. **Net Pals**
    Create and manage a Clubhouse bulletin board to the focuses on important social issues facing young people. Make connections with interesting adults and young people studying and working around the world.

6. **LEGO "Sim" City**
    Design and build a forty square foot computer controlled LEGO city that will include among its moving parts a train set and robotic arm. The city will be on display in The Computer Museum as a project built by youth in the Clubhouse.

7. **Clubhouse Animation Studio**
    Develop computer generated 2-D and 3-D animation cartoons and dance. Present this animation on Boston's cable access channel.

For more information call Sam at 426-2800 x347 or Noah at 426-2800 x374.

8. **Clubhouse Laser Light Show**
    Design and build a device for presenting a laser light show. Write software to control the device and create new and interesting shapes.

9. **Computer Game Production**
    Design and develop computer games using a variety of platforms including MicroWorlds, Basic or C. Edit and redesign existing games.

10. **Computer Generated Sound and Music**
    Create new sounds, sound effects, and music using computer technology. Provide these sounds as background for graphics, animation and video.

11. **Virtual Worlds and Simulations**
    Create virtual worlds in the computer, including buildings, planets, cities, landscapes, cars, costumes, people, dance, and sports. Add your objects to the ever growing CitySpace, a virtual city being built by youth nationwide.

12. **Virtual Comic Book**
    Develop a comic book that is available over the Internet. It could include video, text, graphics and sound and have an interactive format.

13. **Remote Video Links**
    Create a video link from a camera on top of the building to a computer in the Clubhouse. Create a two way video link between the Clubhouse and another museum. Build a telescope for the top of the museum with a video link to the Clubhouse.

14. **Multi-media Interactive Essay**
    Incorporate multi-media interactive formats into presentations for school. Encourage schools and teachers to see these formats as positive alternatives to standard presentation formats.

15. **Creative Writing**
    Create stories, books, journals, a family tree, and time lines using the computer.

16. **Design your own project**
    Projects in morphing, artificial life, system dynamics, chaos, fractals, fuzzy logic, liquid graphics or just paint a picture.

No experience necessary, just an interest in learning while having fun.

For more information call Sam at 426-2800 x347 or Noah at 426-2800 x374.

Executive Director
Oliver Strimpel

Asst. to the Director/
Director of
Administration
Mary McCann

Director,
West Coast Office
Carol Welsh

Volunteer Coordinator

Administrative Support Asst.

Founding President/
Director of Collections
Gwen Bell

Controller
Don Collins

Director of
Design
Ted Groves

Director of
Development
Betsy Riggs

Director of
Education
Marilyn Gardner

Director of
Exhibits
David Greschler

Director of
Marketing
John Marchiony

Director of
Public Relations
Gail Jennes

Collections Manager

Accounting Asst.

Shop Foreman

Corporate
Relations Manager

Manager
Visitor Services

Interactive Developers

Facilities Marketing
Manager

PR Coordinator

Design Asst.

Membership
Fund
Manager

Floor Managers

Exhibits Researcher

Special Services Manager

Visitor Assistants

Computer Bowl
Project Manager

Admissions
Supervisor

TNS Network Manager

Exhibit Kits Manager

Admissions
Representatives

Media Arts Exhibit
Developer

Development Assistant

Marketing Associate

Exhibits Engineer

Clubhouse Program
Manager

Store Manager

Asst. Exhibits
Engineer

Community
Programs
Coordinator

Assistant Manager

Mentor
Coordinator

Foundations/Relations Assistant

Clubhouse
Consultant

Sales Assistants

Clubhouse Software Developer

THE COMPUTER MUSEUM
PHONE LIST
UPDATED JUNE '94

ADMISSIONS DESK/LOBBY		310/352
AUDITORIUM PROJECTION BOOTH		305
ANNUAL FUND/MEMBERSHIP	(Sue Pekock)	338
DECTALK/PUBLIC INFO	.	423-6758
EXHIBIT KIT SALES	(Kevin Kelly)	332
FAX		426-2943
GALLERY, FLR 6, BAY 4		265
GROUP VISITS	(Eileen Knight)	800-370-CHIP
SECURITY		260
VISITOR ASSISTANT OFFICE		350
TO PAGE	Offices and galleries	**612**
	Galleries only	**611**

Ballard, Martha	Facilities Marketing Manager	340
Bauman, David	Network Mgr., TNS Exhibit	348
Bell, Gwen	Founding President (Collections)	331
Boren, Sari	TNS Exhibit Lab	425
Boucaud, Phillomin	Store Sales Staff	307
Cardoza, Kristan	Exhibits Research Asst.	377
Carswell, Kate	Manager of Visitor Services	344
Children's Museum		426-6500
Christy, Sam	Clubhouse Project Manager	347
Collins, Don	Controller	343
Computer Clubhouse		423
Conference Room (5th floor)		304
Conference Room (6th floor)		385
Conference/Skyline Room		421
Cooke, Stina	Clubhouse Software Developer	395/423
Cyr, Alan	Visitor Asst./Asst. Exhibits Engineer	350/653
Dasha, Margaret	Museum Store Manager	306
Eichten, Bob	Administrative Support Assistant	364
Ferris, Marjorie	Corporate Relations Manager	339
Fest, Paul	Store Sales Staff	307
Gardner, Marilyn	Director of Education	345
Gonzalez, Giselle	Visitor Assistant/Clubhouse Asst.	350/651
Greene, Don	Shop Foreman	328
Greschler, David	Director of Exhibits	349
Groves, Ted	Director of Design	373
Hertz, Kimberly	Floor Manager	350/665
Hussey, Jane	Marketing Associate	422
Jennes, Gail	Director of Public Relations	341
Johnson, Daniel	Visitor Assistant	350/665
Jose, Kate	Computer Bowl Project Manager	346
Kelly, Kevin	Exhibit Kits	332

	Exhibit Kit Sales/Messages	638
Knight, Eileen	Special Museum Services Manager	334
Lee, Brian	Computer Clubhouse Consultant	423
Mandolini, James	Design Assistant	397
Marcano, Gail	Admissions Rep	352/670
Marchiony, John	Director of Marketing	396
McCann, Mary	Dir. of Admin./Asst. to Director	372
Mosher, Tom	Visitor Assistant	350/662
Mourant, Wanda	Visitor Assistant	350/659
Pekock, Susan	Membership Fund Manager	376
	Annual Fund/Membership	338
Pollack, Craig	Store/cashier	307
Rackliffe, Julie	Development Assistant	432
Riggs, Betsy	Director of Development	378
Rizzo, Jenny	Admissions Representative	352/663
Russell, Lainey	Admissions Representative	352/677
Sami, Jahi	Exhibits Engineer	336
Sellers, Geoff	PR Coordinator	329
Sievers, Heather	Accounting Asst/Volunteer Coord.	411
Southall, Noah	Mentor Coordinator	374
Store		307
Strimpel, Oliver	Executive Director	330
Teplow, Laurie	Visitor Assistant	350/
Tremblay, Ben	Interactive Technologies Developer	426
Tremblay, William	Interactive Technologies Developer	394
Walker, Tony	Floor Manager	350/658
Wallace, Brian	Collections Manager	342
	Media Arts Exhibit Developer	
Welsh, Carol	Director, West Coast Office	415-323-1909
Wetmore, Adrienne	Store Sales Staff	307

MUSEUM WHARF:

Buccieri, Valerie	Building Manager	232
Fitzgerald, Mike	Computer Services Director	289
Golder, Michael	Maintenance Supv.	319
Halwes, Michael	Computer Specialist	286
Roth, David	Facilities Director	323

NOTE: E-Mail addresses for Museum Staff:

      lastname@tcm.org   Example: strimpel@tcm.org

The Computer Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

PUBLIC RELATIONS DEPARTMENT
6/13/1994

Media Summary: Fiscal Year 1994

PRINT CIRCULATION

General Museum (includes Clubhouse):	63,987,216
Harvard vs. Human Chess:	5,611,269
Computer Bowl All-Star Game:	5,131,507
Internet Auction:	2,275,892
TOTAL PRINT CIRCULATION:	77,005,884

- **an increase of 16,600,591 million over 1993**

BROADCAST IMPRESSIONS

General Museum:	54,510,000
Harvard vs. Human Chess:	9,695,000
Computer Bowl All-Star Game:	31,300,000
Computer Clubhouse:	4,000,000
Internet Auction:	1,000,000
GRAND TOTAL BROADCAST IMPRESSIONS:	100,505,000

- **an increase of 52,367,200 million over 1993**

GRAND TOTAL PRINT & BROADCAST: 177,510,884

- **an increase of 69,022,791 million over 1993**

[Please note: These figures are estimates, and do not include figures for many international publications or broadcast outlets (which were not available).]
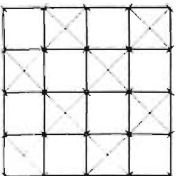
MEDIA HIGHLIGHTS: FY 94

The Computer Museum

• generated a 64 percent increase in total media impressions over FY'93—without a major exhibit opening (the likely result of the Museum's growing stature, and the promotion and marketing of regularly scheduled events, activities, and temporary exhibits).

• generated international coverage in: England (BBC), Scotland, France (16-page color feature in the French PC Magazine), Switzerland, Scandinavia, Germany, Russia (Moscow), Japan, Australia, Canada (Toronto, Quebec), Brazil, and Mexico.

• staff were increasingly quoted on subjects related to people and computing by media such as: The (London) Financial Times, Newsweek, The New York Times, The Wall Street Journal, The Washington Post, The Boston Globe, The Boston Herald, NPR, other syndicated radio and broadcast outlets.

General: a four-minute "Good Morning America" feature; segments on ABC "Nightline," National Public Radio; an intro to PBS's "Scientific American" show (inside The Walk-Through Computer™ by Alan Alda); story in OMNI.

Human vs. Computer Chess: Nightline; Voice of America; Associated Press; Forbes; Moscow Times, Boston Globe, Boston Phoenix.

The Computer Bowl All-Star Game: Washington Post "Style" (syndicated); L. A. Times; Boston Globe; Seattle Times; San Jose Mercury News; San Jose Business Journal; Canadian TV; Sci/Tech Satellite News; "Computer Chronicles" (PBS and PCTV); "On Computers" Radio (worldwide).

Internet Auction: Der Spiegel; London Daily Telegraph; Business Week; Computerworld; Information Week; "Computer Chronicles" (PBS).

Michael Berger, Rich Tennant, Letter to the White House, VR, CitySpace, Computer Animation, etc.: New York Times, Washington Post "Travel With Children" (syndicated); Detroit News-Free Press (syndicated); Ladies' Home Journal; Houston Chronicle; Boston Globe "Names & Faces," "Weekend," Calendar Pick and CityWeekly; tourist magazines WHERE (cover and inside) and Panorama; WCVB-TV and WBZ-Radio; United Airlines and Brazilian in-flight magazines; Museum News, Financial Times.

The Computer Clubhouse: Tokyo Today Radio; The Seattle Times; Museum News; Technology and Learning; Information Week.

Upcoming: features in National Geographic World and Technology and Learning; highlights in The Wall Street Journal Technology section, Women's Day, American Airlines, United Airlines and Corridor Shuttle in-flight magazines.

The Washington Post

Style

Scrambling Eggheads

Computer Moguls Duke It Out in Trivia Game

By John Schwartz
Washington Post Staff Writer

SAN JOSE, Calif.

This is anything but trivial.
Billionaire software mogul Bill Gates has just been asked how many bytes are in a megabyte. Gates, whose Microsoft products run millions of computers worldwide, tries to do the math in his head and flubs it.

It's only a rehearsal—and the opposing team doesn't get the number right either—but Gates is consternated.

(Quickie computer lesson: A megabyte is *about* a million bytes, or words, of data, but Gates knows that the number isn't precise because memory units generally come in powers of two—you know, 4, 8, 16, 32, 64, 128, 256, 512 and up. So a kilobyte is 1,024 bytes, and multiplying a kilobyte by a kilobyte will get you a megabyte, or 1,048,576 bytes. Got it?)

It matters because this is the Computer Bowl, an annual trivia contest played as blood sport. The bowl is patterned after the old "College Bowl" on TV, but instead of questions about Garibaldi and uranium 235, the only subject is computers. The combatants are industry luminaries such as Gates and Mitch Kapor, cofounder of Lotus Development Corp. and now head of the Electronic Frontier Foundation, the high-tech civil liberties group. If anyone should know this stuff, they should—they created a lot of it, and it's made several of them into gazillionaires.

The contest pits the East Coast,

See **CONTEST, B4, Col. 1**
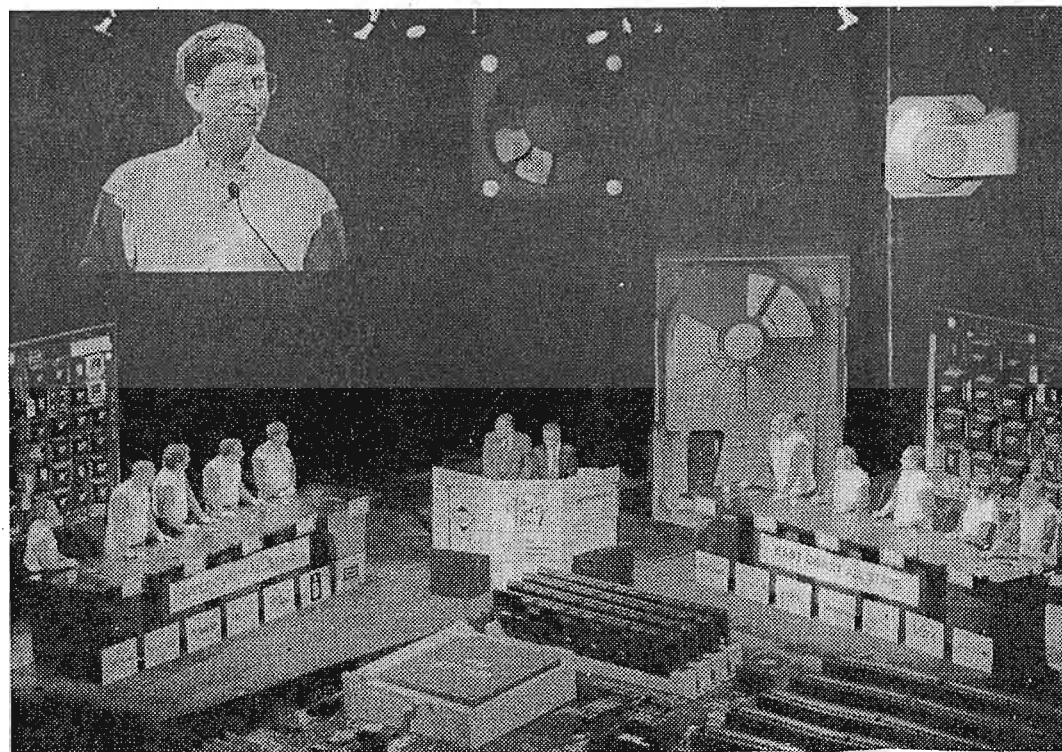
ASSOCIATED PRESS

At yesterday's Computer Bowl, the West Coast, featuring PC giants like Bill Gates (projected on screen above), was pitted against the East Coast mainframe luminaries.

Computer Trivia War

which gave the world mainframes and minicomputers, against the West Coast, which gives us silicon chips and personal computers. So far, the West is ahead, 3 bowls to 2. This year's contestants are competing for the title "Computer Masters of the Universe," since each of the five players on both teams had been the highest-scoring player from a previous year's bout.

One well-armed Luddite terrorist could have sent America back to typewriters and Wite-Out.

Why would people who have proved their worth in so many other ways want to participate in this olympics of cyber-minutiae? It's for a beloved cause: Since its inception in 1988, the event has raised more than $4 million for the Computer Museum in Boston. It's also a contest that shows off the players' treasured skills. "I'm good at that kind of trivia," says Kapor, bleary-eyed with jet lag but still capable of near-lethal understatement. Heidi Roizen, founder of a software company called T/Maker, says, "They do take this very seriously—it's a chance to show individual brain power."

Looking at these bright, hyper-successful people lined up behind the buzzers, it is clear that many of them still remember their SAT scores.

The players are all wearing baseball-style T-shirts displaying mock sports trading cards of the contestants: The sedentary Kapor (East Coast) as a championship swimmer,

Interval Research CEO David Liddle (West Coast) as a brawny kayaker, Gates (West) as a baseball player (and not, sadly, a bodybuilder, as an unforgettable cover of Business Month magazine once portrayed him).

Their playing field is the inside of a humongous computer, set up in the San Jose civic auditorium. The set—complete with hard drive and cooling fan—was on loan from chipmaker Intel, which used the Land of the Giants props at a recent trade show.

"Ladies and gentlemen, hackers of all ages," says emcee Stewart Cheifet, host of the PBS show "Computer Chronicles," introducing the bout. "It is the revenge of the nerds, the ultimate moment of geek glory!" (Cheifet was joined in asking the questions by Intel Corp. CEO Andrew S. Grove.)

The players are grinning—it's only a game, right? But they stand tense at their posts, eager to slap the buzzer before the opposition can, their personal microprocessors working at their highest clock speeds. Liddle slams his button the moment he hears the letters "ATM"—before Cheifet can finish the question—and blurts out "Asynchronous transfer mode." It's the long form for a well-known computerese acronym, but it's not what the questioners wanted—they were actually asking about automated teller machines. An agonized "oooooh!" goes up from the spectators as they realize that the power player has been sucker-punched.

By the standards of previous years, though, this bowl was a bit tame. During the 1990 round, Gates was sputteringly angry over some of the judges' calls on disputed answers. And in 1991, Roizen says, he upbraided her for not reading enough books to prepare for her appearance. Of course, Gates is married now, and that might have calmed him down.

The half-time entertainment was a charity auction—also to benefit the Computer Museum—that threatened to overshadow the bowl. The moneyed crowd bid a book of essays on Albert Einstein autographed by the scientist up to $3,600, while one of famously casual Kapor's old Hawaiian shirts garnered $1,300.

But the high point was a white-knuckled bidding war between Gates and computing pioneer Gordon Bell, who developed the phenomenally successful line of VAX minicomputers for the Digital Equipment Corp. The prize: the right to be named publisher of the industry journal Computerworld for a week and visit one of the newspaper's offices around the world. With the goading of Christie's auctioneer Ursula Hermacinski, who artfully combined the skills of her trade with those of a stand-up comic, the two bid the package up to $28,000 before Gates dropped out.

At a postgame dinner, Patrick McGovern, chairman of Computerworld's corporate parent, offered Gates a week of his own on the condition that he match Bell's price. Gates agreed; this is the kind of money, after all, that you could probably find crumpled up in the lint fil-
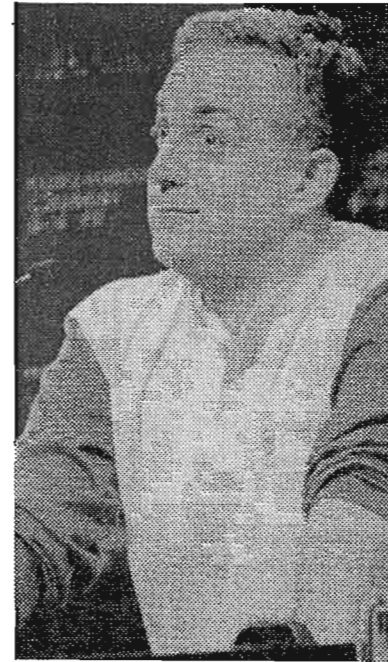
Mitch Kapor, co-founder of Lotus Development Corp., tries to answer a question at the Computer Bowl.

ter of his dryer. No word yet on when those collector's edition Computerworlds will hit the newsstands, however.

When the final buzzer had been slapped and the last factlet unearthed, the East Coast had bested the West, 190-150, and evened the score of Computer Bowls, 3-3.

The players, some of whom have fought it out in the marketplace, looked relieved that the contest was over. As the audience filed out, Gates was still shaking his head and, by then, smiling over how he flubbed the answer in the rehearsal. "I felt so stupid about that," he said, smiling. "I know all the powers of two!"

For Computer Geeks Only

QUESTIONS:

1. What brand of supercomputers was featured in the novel "Jurassic Park?"

2. In what 1974 movie did George Segal have a computer implanted in his brain?

3. What is President Clinton's Internet e-mail address?

4. What does the acronym "SEGA" stand for?

5. Of the following, who does not wear earrings? Jean Louis Gassee, Steven Wallach or Philippe Kahn?

6. Where does the "Gopher" search software on the Internet get its name?

7. Was the internal pre-release name of Borland's Quattro spreadsheet: 1) Buddha 2) Rows and Columns or 3) Spreadsheets R Us?

8. How many buttons did Doug Engelbart's first mouse have?

ANSWERS

1. Cray

2. "The Terminal Man"

3. president@whitehouse.gov

4. Service Games

5. Philippe Kahn

6. The University of Minnesota's burrowing mascot, the gopher

7. Buddha, based on Borland's pun (and hope) that Quattro would "assume the Lotus position"

8. Three.

Business

Clash of the computer titans

Industry tycoons, wizards pursue trivia in museum fund-raiser

By Ronald Rosenberg
GLOBE STAFF

Knowing who sewed Apple Computer founder Steve Jobs' torn blue jeans at a 1976 Atlantic City computer fair and the names of the two science fiction movies that used the phrase "klaatu barada nikto," just might get you into next year's Computer Bowl 2.0 team.

Trying to come up with answers to these and other computer trivia questions on Friday night were two groups of bicoastal computer industry tycoons, pioneers and cognoscenti. They included Bill Gates, the founder and chairman of Microsoft Corp., for the West Coast and Mitch Kapor, the founder of Lotus Development Corp. and now president of the Electronic Frontier Foundation, who was the East Coast captain.

Both participated in earlier Computer Bowl games and together with eight other Bowl alumni they came to the Civic Audi-

> The All Star Computer Bowl is a major fund-raiser for Boston's Computer Museum. This year, the game show set was decorated to resemble the inside of a personal computer.

torium in San Jose, Calif., for the Computer Bowl All Star Game, which ended with the Kapor-led East Coast beating the West Coast All Stars 190 to 150. Thus after six rounds, each coast has won three games each and Computer Bowl 1.0 is history.

"The harsh winter must have given them a lot of time to study," chuckled West Coast team captain Bill Joy, the founder and chief technical officer of Sun Microsystems Inc.

The All Star Computer Bowl, which will be shown next month in two parts on "Computer Chronicles," the PBS series, is a major fund-raiser for Boston's Computer Museum. Each year, the televised event becomes more elaborate. This year, one corporate sponsor, Intel Corp., decorated the game show set to resemble the inside of a personal computer.

At half-time, the East Coast led 80 to 70 having known that one of the earliest word processors was called Volkswriter and that the University of Waterloo in Canada won the 18th annual international collegiate programming contest over the Massachusetts Institute of Technology and Harvard University.

Computer tycoons, wizards aid fund-raiser for museum

One twist during half-time was a computer celebrity bowl that included auctioning off a simulated aerial dogfight, sailing and skiing vacations, a round-trip flight for four from Boston to Martha's Vineyard with pilot John Poduska, the founder of Prime and Apollo Computer, and an autumn dinner for four with Christopher Hogwood, artistic director of the Boston-based Handel and Hayden Society.

But the highlight of the event was the last and most expensive item in the auction that led to a financial duel between Gates and Gordon Bell, best known as the engineering leader at Digital Equipment Corp. and now a consultant to East and West Coast startups. The prize was a chance to become publisher of Computerworld, the Framingham-based trade publication, for a week plus round-trip airfare to and a week's accommodations in any of the 45 countries where a Computerworld newspaper is published.

The bidding, which started at $1,000 quickly climbed to $17,000 with Christie's auctioneer Ursula Hermacinski appealing to their egos and reminding both men that the winner would have "bragging rights." With Bell's bid to $28,000 and the auditorium crowd counting down the final "going once, going twice. . ." Gates shook his head no.

Earlier, Gates won a bidding battle with Bell's wife, Gwen, who is the founding president of the Computer Museum, for the Poduska-piloted flight to the Vineyard with a $1,400 bid.

"Of course this is bubble gum money for him," said Lois Coit, who

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Computer Bowl questions

How much computer trivia do you know? Below are 10 questions taken from the toss-up and bonus rounds posed to the Computer Bowl All Stars.

1. Name three programming languages that were named after real people.

2. In the novel "Jurassic Park" by Michael Crichton, a supercomputer is used for DNA sequencing. What brand of supercomputer is used?

3. Among the many acronyms in the computer field is FTP. What does it stand for?

4. Late last year, one of the major on-line computer services was acquired by an international media magnate. Which service, which magnate?

5. If you're looking for something on the Internet, you might use the search software called Gopher. Where did Gopher get its name?

6. Two teen-agers use a computer to create a woman in this 1985 movie. Name the film.

7. What is President Clinton's Internet e-mail address?

8. The Digital Equipment Corporation's PDP-10 is a well-known minicomputer. What was its immediate predecessor called?

9. In this 1967 Walt Disney movie, an electrical accident dumps the contents of a computer's memory into the brain of a college student played by Kurt Russell. Name the film.

10. IBM was traditionally a stock market favorite. But in this decade it announced its first ever quarterly loss. What was the year and quarter?

ANSWERS: 1. Ada, Pascal and Euclid. 2. Cray. 3. File Transfer Protocol. 4. Delphi, Rupert Murdoch. 5. The University of Minnesota mascot. 6. "Weird Science." 7. PRESIDENT@WHITEHOUSE.GOV. 8. PDP-6. 9. "The Computer Wore Tennis Shoes." 10. Fourth quarter, 1992.

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with her husband, Stephen Coit, a Boston-based venture capitalist, watched the bidding in California through a satellite hookup at the Computer Museum.

Other winning bids included $1,300 for one of Mitch Kapor's Hawaiian shirts and $3,600 for a rare book of essays autographed by Albert Einstein. The winning West Coast bid was $100 higher than Mitchell Kurtzman's reserve bid. He is the cofounder and president of

Powersoft Corp. of Burlington and said he would have gone higher if he was at the auction. Watching it from Boston was frustrating, he said.

The auction raised about $80,000 in addition to the estimated $400,000 that the event took in.

"Why isn't there a telephone line to California? I would have gone higher," Kurtzman said, watching the auction on a large screen in the Computer Museum along with 250 invited guests and museum sponsors.

The Computer Bowl, which is modeled after the General Electric College Bowl with 10-point toss-up questions and 30-point bonus rounds, is a test of computer names, acronyms, dates and places with an emphasis on Hollywood computer trivia. Asking the questions were Andrew S. Grove, the president of Intel Corp., and Stewart Cheifet, executive producer of "Computer Chronicles." Neither teams knew that the phrase "klaatu barada nikto" appeared in both "The Day the Earth Stood Still" and on a blackboard in the movie "Tron." And there was some confusion over who sewed Jobs' pants. The correct answer was Stan Veit's mother-in-law. Veit was a colleague of Jobs at Apple.

But at least one team player did know that 1969 was the first year CompuServe went on-line and that Philippe Kahn, the president of Borland International did not wear an earring.

Joining Kapor on the East Coast was Bob Frankston, codeveloper of VisiCalc, the first computer spreadsheet and now working for Microsoft in the Boston area, Neil J. Colin, president of Foundation Technologies Ltd. and a founder of Phoenix Technologies Ltd. of Norwood, David L. Nelson, a cofounder of Apollo Computer and Fluent Machines and now senior software engineering consultant for Novell Multimedia (Novell acquired Fluent).

The West Coast included Joy, Gates, Jeffrey Kalb, now a California semiconductor and systems consultant who previously ran the computer chip operations at Digital Equipment Corp., David Liddle, president

of Interval Research Corp. and Harry J. Saal, president of Smart Valley, Inc.

One multiple choice question both teams got wrong concerned a US News and World Report survey of engineering school deans who ranked schools in computer engineering. Asked to name the No. 1 school given a choice of Stanford, Carnegie Mellon, Cal Tech and MIT, no one chose MIT, the correct answer.

Lotus Founder Working to Guard Privacy in the Electronic Age

8078

By MARTHA GROVES
TIMES STAFF WRITER

SAN JOSE

When Mitchell Kapor founded a computer software company in 1982, he chose the name Lotus, a word representing the state of perfect enlightenment in the Hindu philosophy. Five years later, he left Lotus Development Corp. at least $100 million richer.

These days, the developer of the Lotus 1-2-3 spreadsheet program mainly tries to enlighten government and citizenry about the enormous potential of the nation's electronic byways.

His nonprofit Electronic Frontier Foundation, founded in 1990 with Grateful Dead lyricist and author John Perry Barlow, seeks to safeguard the right of free speech and other civil liberties of on-line Americans. Kapor is also a member of the National Information Infrastructure Advisory Council, helping the Clinton Administration design its information superhighway policy.

We caught up with Kapor recently in San Jose at the 1994 Computer Bowl All-Star Game, a "technical IQ" fund-raiser for Boston's Computer Museum. Kapor led an East Coast squad that out-nerded the West Coast team, featuring the likes of Microsoft's Bill Gates.

Q What is your worst fear about the information superhighway?

A If the only things you could get were reruns of everything ever produced in Hollywood and the home shopping channels selling the full range of fake gems—that would be a disaster.

Q What is your greatest hope?

A That we wind up with a network that reaches out to include virtually everyone in the society and that is highly participatory, in which people are not simply passive recipients of pre-packaged information, but are engaged in a wide variety of activi-

ties, from education to entertainment to recreation to commerce. A system which can help revitalize the democratic process by encouraging more citizen participation, a network which stimulates information entrepreneurship and innovation, something which really restores the balance of power in a way that puts more power in the hands of individuals and less power in large, centralized institutions.

Q You are said to be an admirer of the principles of Thomas Jefferson. Why?

A I find his political philosophy to be a major inspiration. He was not only the champion of liberty as the principal author of the Bill of Rights, he was a tremendous believer in decentralization of government, of putting control at the local level and letting individuals and communities shape their own destiny. I think there's an opportunity with networks like the Internet, as they evolve and grow up, to put into practice a lot of the Jeffersonian principles.

Q Yet the Administration is perhaps not cooperating as fully as some might have hoped?

A I think that the Administration really has a large vision for the National Information Infrastructure which is, on the whole, compatible with the kinds of things we've been talking about here. There are huge difficulties in crafting legislation which can get us out of the current morass and into this new regime. Where there are disagreements with the Administration, it's on issues of privacy.

Q Is privacy the Electronic Frontier Foundation's biggest concern?

A It is certainly on EFF's short list of issues, because there are major controversies, in that the federal government wants to impose certain systems that would benefit national security purposes and law enforcement.

Q The so-called Clipper Chip would allow the FBI and other agencies to tap into new digital communication networks.

A It would have an unjustified effect on personal privacy and communications forever. I was thinking about this after President Nixon's death. People who came of age during and lived through Watergate have an appreciation why there are separations of powers between different branches of government and why the framers of the Constitution limited the power of government. Because they knew people are fallible and periodically will get governments that dramatically and systematically commit major abuses of power. At the same time, I absolutely believe there are legitimate national security and law enforcement issues. I don't want to see the hands of government unnecessarily tied, but I feel the rights of the individual to

privacy are sufficiently important that we need a more public discussion on initiatives like Clipper Chip. We just can't swallow it when they say this is the right solution and we have to do it.

Q The commercialization of the internet seems inevitable. Is somebody going to want to manage this creature?

A I'm sure there are going to be various kinds of demands for more controls. Heavy-handed attempts to take it over or to impose some sort of new code are going to fail, because people won't go for it. My hope is that people can for the most part work things out on a voluntary, cooperative basis through agreements that don't require a dysfunctional bureaucracy. That has certainly been the tradition and the spirit of the Internet. Whether it survives is really the challenge.

Q&A

Mitch Kapor

BONNIE KAMIN/For The Times

Age: 43

Education: Bachelor's from Yale College, with interdisciplinary major in cybernetics. Master's in psychology from Beacon College.

Interests: Eastern religion, reading, biking on Martha's Vineyard

Family: Kapor and his wife, Ellen Poss, a psychiatrist, have a young daughter and son. They live in Brookline, Mass.

Projects: Kapor is developing a program for a Boston public TV station that he refers to as the "Wall Street Week of Cyberspace."

Une destination pour cet été

LE MUSÉE DE L'ORDINATEUR

à Boston

Aimeriez-vous vous promener dans votre ordinateur, voir ce qu'il y a dedans et comprendre un peu mieux comment ça marche? C'est l'une des possibilités qu'offre le Computer Museum de Boston, le plus important musée au Monde dédié exclusivement à l'ordinateur. Ce musée ne se trouve pas si loin que cela du Québec et il est tout près des plages de Nouvelle-Angleterre très prisées des Québécois. Ce pourrait être un but d'excursion durant l'été, en particulier les jours de pluie où l'on n'a pas envie de s'ennuyer à l'hôtel ou sous la tente.

Le Computer Museum est installé dans un bâtiment ancien rénové situé à proximité du port de Boston. On y présente l'ordinateur, son histoire et son fonctionnement aussi bien que les différentes applications possibles avec les logiciels. Le musée offre une excellente formation de base tant aux enfants qu'aux adultes et il le fait de façon divertissante et originale.

Ce qui semble surtout attirer l'attention des visiteurs, c'est une reproduction agrandie 50 fois d'un ordinateur qui occupe deux étages de l'édifice. Juste pour vous donner une idée de la grandeur de l'ordinateur, sachez qu'un enfant peut se tenir debout sur l'une des touches du clavier. L'écran a une surface de 10 mètres carrés. En pressant à deux mains l'une des grosses touches de fonction de ce clavier ou en manipulant une gigantesque boule de contrôle, les visiteurs peuvent indiquer sur quel pays ils aimeraient obtenir de l'information. Cela sert d'exemple pour montrer comment l'ordinateur fonctionne.

Photo Jack Williams

L'ordinateur commence par indiquer la route la plus courte pour se rendre dans le pays choisi et on peut voir sur l'écran géant des images de paysages que l'on pourrait voir le long du chemin en s'y rendant. En se promenant à l'intérieur de l'ordinateur géant, on peut voir ses différentes composantes et une simulation de la façon dont il procède pour accéder aux données et les traiter. De la lumière circulant à l'intérieur d'un tube de néon présente le parcours suivi par les données durant tout le processus.

Photo Computer Museum
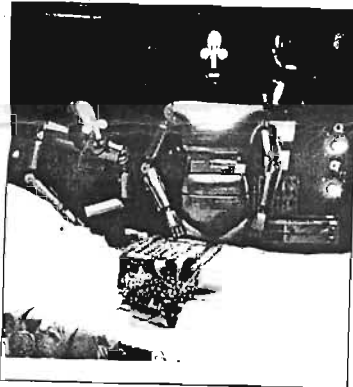
Dans la salle des robots et des «machines intelligentes», on peut voir 25 robots plus ou moins célèbres, en particulier R2-D2 du film Star Wars. Une présentation multimédia de 10 minutes montre une vingtaine de robots durant leur vie active sur Terre, sur la Lune ou sous la mer. Des présentoirs et des panneaux d'information permettent aussi de mieux comprendre ce qu'est l'intelligence artificielle. On nous donne des exemples d'applications récentes dans ce domaine en plus d'expliquer comment les robots font pour voir, toucher, entendre ou se déplacer. Comme dans les autres salles, plusieurs activités sont plus spécialement tournées vers les enfants: un jeu de LEGO géant avec des blocs actionnés par un robot, un ordinateur qui colorie une carte des États-Unis selon les commandes vocales qu'il reçoit...

L'exposition *People and computers: milestones of a revolution* présente l'histoire et l'évolution de l'ordinateur depuis les années 1940. On peut y voir les premiers ordinateurs qui étaient immenses mais moins puissants que certains ordinateurs de poche actuels. On a recréé dans le musée plusieurs environnements dans lesquels on utilisait ces appareils afin que les visiteurs puissent mieux s'imaginer comment cela se passait dans un passé pas si lointain que ça. On peut aussi voir divers objets rattachés aux ordinateurs des différentes époques, des films et des vidéos qui les montrent en activité.

Photo Marjorie Nichols

La salle *The computer and the image gallery* est consacrée à tout ce qui touche à l'image informatisée. On y montre sur des ordinateurs aussi bien que par des films, des montages vidéo ou des diapositives ce qu'est le traitement d'images et comment on peut en faire. On peut découvrir dans cette salle les réalisations les plus récentes et les plus spectaculaires en matière de simulation, d'images en trois dimensions, de dessins animés, de fractales ou d'animation vidéo par ordinateur.
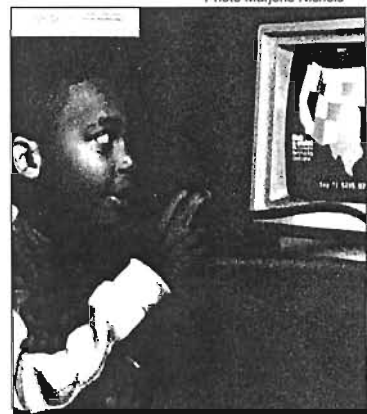
Enfin, l'exposition *Tools & toys: the amazing personal computer* tente de démontrer la grande diversité d'applications possibles avec un ordinateur personnel. On y présente donc le multimédia aussi bien que toutes sortes d'autres possibilités dans des domaines aussi variés que la musique, le design, la réalité virtuelle, les jeux ou même la micro-édition. Les visiteurs peuvent y faire diverses expériences avec la voix synthétisée, échanger des données dans un système d'ordinateurs en réseau, essayer des encyclopédies sur disque CD-ROM ou jouer à différents jeux.

Dans la plupart des salles, les visiteurs peuvent s'asseoir à l'un des ordinateurs qui y sont disponibles et se servir de logiciels en relation avec le thème traité. Ce n'est pas un musée que l'on visite passivement mais un lieu de découverte et de participation où l'on apprend aussi par ses propres expériences. À vrai dire, c'est ce qui fait la notoriété de ce musée qui existe depuis maintenant douze ans. Le Computer Museum est une institution de bonne réputation qui a établi des liens avec le National Museum of American History de la Smithsonian Institution depuis 1987, ce qui peut être considéré comme une garantie de la qualité des expositions qui y sont présentées.

Le Computer Museum est situé au 300 Congress Street. Il est ouvert de 10 heures à 18 heures tous les jours de l'été. Le prix d'entrée est de 7$ par adulte, de 5$ pour les enfants de 5 ans et plus ainsi que pour les personnes âgées. Les enfants de 4 ans ou moins ne paient pas. Les tarifs sont

réduits de 50% le dimanche après-midi entre 15 heures et 17 heures. On nous a aussi avisé que toutes les salles du musée sont accessibles en fauteuil roulant.

Si vous arrivez du Nord par l'Expressway I-93, direction sud, vous quittez l'autoroute à la sortie 23 vers High & Congress Streets. Vous tournez ensuite à gauche sur Congress Street que vous suivez le temps de passer par deux carrefours avec des feux de circulation puis le pont Congress Street Bridge. Le musée est à gauche juste après le pont et il y a plusieurs parcs de stationnement aux alentours sur Congress Street et Northern Avenue. Pour obtenir davantage d'informations sur les horaires et les événements spéciaux, on peut rejoindre la boîte téléphonique vocale du musée au (617) 423-6758.
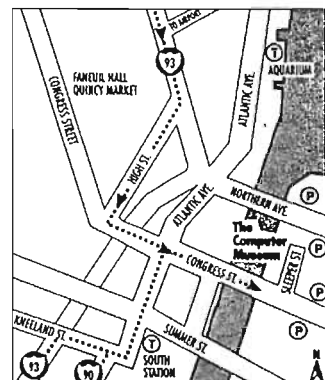
Plan des alentours du musée.
Source: Computer Museum

PROFILE

Gwen Bell:

Computers' past providing her life's satisfaction

By JIM NASH

It takes a minute to really see what you're looking at. It looks like an Aztec or a Mayan pattern sewn into the fabric of a sectional couch.

It's beautiful needlepoint. Colors, rich maroon and pastel blue and pink, not flowing in bends but running in rigid right angles and blunt T's. The boldness of the design hides its complexity.

It is, in fact, the diagram of a computer chip. Gwen Bell saw the semiconductor's die-cast face years ago, but saw more in it than its utilitarian engineers had intended. She sewed the face into cloth, and gave it a permanent place in her husband's Los Gatos home. (Her home's in Boston, but that's getting ahead of things.)

That the pattern is a blueprint of the first retina chip is irrelevant. That it's art is obvious. Just as much as the French fairy tale she synopsized and illustrated in needlepoint on the otherwise austere dining-room chairs.

Her husband Gordon said the needlepoint is a clue to Ms. Bell's essential nature.

"I don't think what comes out, when people first meet Gwen, is her fundamental creativity," Mr. Bell said.

Ms. Bell's chip needlepoint teases the viewer with its irony. No other industry in history has clung to the concept of "state of the art" as has high-tech. And yet no industry as guiltily ignores its own inherent art.

If Bill Gates is the brains of high-tech and Steve Wozniak the heart, Ms. Bell must be the industry's eyes.

She founded The Computer Museum in Boston and, in so doing, created for herself a new occupation: computer-industry preservationist. Aside from her family, nothing else seems to be as important to her as recording the names, deeds and machines of high-tech.

In fact, when not guiding the museum and serving as president of the Association for Computing Machinery, Ms. Bell is organizing the Computer Bowl. She scours the industry for big-name contestants in a Silicon Valley/New England trivia contest that raises funds for the museum.

Where her father had Prairie du Chien for a community, Ms. Bell considers the computer industry her community. In occasional face-to-face meetings and through the 40-odd electronic messages she gets a day, she kibitzes often with the likes of Sun Microsystems Inc.'s Bill Joy, Network General Inc.'s Harry Saal and John Doerr, a partner at Menlo Park venture capital firm Kleiner, Perkins Caufield and Byers.

Ms. Bell in no way apologizes for her devotion. She and Mr. Bell, in fact, have a large collection of what they call computer artifacts.

"These are the result of the brightest, most imaginative minds today. Why shouldn't we be saving them?" she asked rhetorically.

She has fierce convictions that she defends with logical clarity; one such conviction is the importance of computers and how they reflect our culture.

She presents her views politely but emphatically, for as long as you're willing to listen. Marshaling her thoughts, Ms. Bell works her hands as if trying to finely mold her words. While talking about the need to save artifacts, she took her chunky necklace tightly in her hand and carefully squeezed the oversized baubles.

Computers foster nothing if not ambivalence in most people. They're gatekeepers and taskmasters, medical marvels and entertainers. But only cars rival computers in the degree to which they've changed Western life.

Museums recognize cars for their artistry and impact, as they do firearms, books and planes. There's even a museum for barbed wire. Why not a computer museum?

"I can't say I thought a computer museum was a crazy idea," said Pamela McCorduck, a longtime friend of Ms. Bell. "But it took a leap of imagination that all these things would amount to anything. But she knew. Gwen was absolutely right."

Ms. Bell's passion is not the whim of a wealthy matron with good-deeds time.

A Depression-era child, she grew up in Prairie du Chien, Wis., near the Mississippi River. Her parents could have been delivered from central casting for a Frank Capra movie.

Her father, Alvin Dru'yor, was a stout man living out the last generation that saw girth as a symbol of prosperity and status. He owned and edited Prairie du Chien's weekly paper, The Crawford County Press.

Her mother, Inez, ran the house, which included creating clothes for the family.

"I did not have store-bought clothes," Ms. Bell remembers, "until I went to college. And even then, when I was 23 and in grad school, my mom made all the clothes I wore to Australia" for a yearlong Fulbright scholarship.

Both her parents believed strongly in preserving the history surrounding them. Prairie du Chien had been a major nexus for fur traders. A mansion-like trading house dominated the town, and several abandoned French, British and American forts dotted the area.

Her father used his position in the community to rally support for public-works projects that would preserve the region's heritage and give out-of-work neighbors purposeful employment.

"Every morning, they had a coffee klatch, the men of the town—the mayor, councilmembers, the chamber (of commerce) president—and my father," Ms. Bell said. "They didn't talk about sports or the stock market. They talked about the issues of the town." Mr. Dru'yor pushed his ideas there and in print.

"At Sunday lunch we always had a roast, chicken or whatever. It was the only time we had a roast, and we'd have our whole family over. (The adults) would sit around talking about things.

"My father would talk about his next editorial. After everyone left, he'd take a nap, get up and write it." He must have been persuasive. The trading house was restored, as were five surrounding forts.

"They were valuable and worth preserving for themselves," Ms. Bell said. "They also were attractions and made the town better."

In 1939, when she was 5 years old, her father took her to the first organizational meeting of the Great River Road Commission, charged with funding and building a scenic road up and down both sides of the historic Mississippi.

One person from each county bordering the entire river was nominated for a seat, and Ms. Bell's father was one. He sat on the commission until 1979, years after the historic project was completed.

That same year, Ms. Bell realized no one was preserving computers, their documentation or even films about them. Little surprise, then, that she and Mr. Bell turned their computer paraphernalia into what had developed into The Computer Museum.

"We saw that the Smithsonian was doing a lousy job of preserving computer history," said Mr. Bell. "It just had a lot of lousy stuff, and we thought we could do better."

He had introduced Ms. Bell to computers while she was enrolled in Harvard's graduate school urban-planning program. They'd met as Fulbright scholars in Australia. At the time, he was attending the Massachusetts Institute of Technology, studying electrical engineering.

"We lived four blocks apart in Cambridge," she said, "but we had to go to Australia to meet each other."

By all accounts, they were well met. While still in the yearlong Fulbright program at the University of New South Wales, Mr. Bell planned marriage.

"He wrote a little script (a short computer program) on the university's computer," said Ms. Bell. "One day, Gordon invited me into the computer room and sat me down in front of (the mainframe). On the screen, the computer began asking me a series of questions that were leading me someplace.

"Eventually, it said something like, 'Well, how about marrying Gordon?' I knew if I said yes to Gordon, I'd be marrying computers, too." The three tied the knot in 1959.

Not at all incidentally, Ms. Bell remembers that the machine was an English computer, the Electric Deuce.

Mr. Bell went on to father the venerable VAX, Digital Equipment Corp.'s signature mainframe computer.

He said he left DEC to invest in technology companies after suffering a heart attack and losing his desire to go head-to-head with Ken Olson, Digital's strong-willed founder. Mr. Bell wanted as few reminders of his time at the company as possible, and bought the Los Gatos house in 1983.

Since then, the couple have scheduled their lives so they are together at least two weeks out of the month, along with a six-week vacation.

"You have to understand each other very deeply to make this sort of thing work out," Mr. Bell said.

As Ms. Bell recounted her life, she did so sitting in what she called "my husband's house."

Although obviously comfortable in the home, with its steepled ceilings and pale blue-stained roof beams, Ms. Bell said she belongs on the East Coast.

"Oh, I think that when I'm old and feeble I'll move here," she said half joking.

Not the least of her reasons for maintaining a home in Boston is The Computer Museum. Ms. Bell is president of her creation.

Curiously, Mr. Bell describes his wife as more of an entrepreneur than he. If that's so, why doesn't she have her own company?

"She's more public-spirited, and thinks more globally about things than I do," he said.

"Gwen's a narrative historian," said Kleiner, Perkins' Mr. Doerr. "This isn't history for ego's sake. She wants to find out what we can understand about computers."

Mr. Gordon said, "I feel good when I write a book and when I build theories. Gwen gets that feeling from preserving this heritage."

Ms. Bell agreed, saying business forces shorter-term viewpoints.

"Gordon has a three-year attention span," she said. "Mine is closer to 20 years. Maybe it has something to do with my having raised children.

"Doing a startup in the framework of a nonprofit (enterprise) is more satisfying for me. At the end of the year, our achievement isn't a balance sheet. I know we're preserving things that other people are throwing away."

Ms. Bell's efforts are likely to have far-reaching effects, said Mr. Doerr.

"We'll see a whole new generation of Bill Joys and Jim Clarks and Danny Hillises 10 years from now as a result of what Gwen's done," he said. Mr. Joy is chief technical officer of Sun Microsystems; Mr. Clark founded and recently retired from Silicon Graphics Inc.; and Mr. Hillis is the chief engineer behind Thinking Machines.

She seems always to be on the hunt for new Computer Bowl contestants. Those who either have appeared in previous bowls or are booked for this year's Championship Bowl include Mr. Joy, Microsoft Corp.'s Bill Gates, Intel Corp.'s David House and Network General Inc.'s founder Harry Saal.

"Even the Computer Bowl shows her creativity," said Mr. Bell. She took an idea offered by one of her associates and created a notoriously hilarious event that has raised $2 million and immense good will.

Gwen Bell

Title: Founding President
Organization: The Computer Museum
Age: 59
Birthplace: Elkatur, Iowa
Residence: Boston/Los Gatos
Education: B.S., U. of Wisconsin, 1955; M.C.R.P., planning, Harvard, 1959; Ph.D., geography, Clark U., 1967
Family: Husband Gordon; son Brigham, 34; daughter Laura, 30
Hobbies: Scuba diving, snow skiing, piano, biking, needlepoint

Christopher Ayers photo

Computer Museum Holds An Internet Auction

8078

⬤ What was billed as the first Internet auction hit the information superhighway last month, and by the middle of the eight-day event, its organizers were declaring it a success.

The idea for putting The Computer Museum's auction on the Internet came out of a committee formed to raise money for the organization's educational programs. Gwen Bell, founding president of the museum, credited another member of the committee with the idea: "Dan Lynch, who started Interop, is on the auction committee. He said 'Why don't we do it on the Internet?'" she recalled.

Lynch introduced the committee to Jay Tenenbaum, founder and CEO of Enterprise Information Technologies, a Palo Alto, Calif., research and development company that specializes in information technology, Bell said. EIT also is involved in the CommerceNet project (*OST*, April 25, p.8).

An EIT developer, Eric Rescorla, implemented the auction application using the company's ServiceMail public domain tool-kit, Tenenbaum said. ServiceMail transforms Unix applications into network service via E-mail, he said.

"It's completely automated," Tenenbaum said of the auction software. "People send E-mail to register, then send E-mail to *services @auction.tcm.org* to bid, quote or get a history of the bidding on items."

According to Bell, the fund-raiser was modeled after public-TV auctions. "For computer folks, the Internet is like our television. The Internet right now is filled with all kinds of experiments. This is sort of the beta test in real time."

Auction participants were able to get a complete catalog of all the items available via E-mail, and could then choose what they wanted to bid on and how much they were willing to pay.

Bell, who is also president of the Association for Computing Machinery, said The Computer Museum's auction committee wanted to make sure everyone could participate, so many lower-priced items were included in the auction. These items included a 1960 Packard Bell 250 manual with logic card, at a starting bid of $25, and the Cardiac, Bell Labs' cardboard computer, with a minimum bid of $5. Some of the items carrying heftier price tags included a $350 first edition of *Cybernetics*, signed by N. Weiner, and a $300 UNIVAC 1 programming manual with an Eckert-Mauchly module.

Once bids were made by E-mail, participants were notified automatically by the auction software if their bids were accepted, or if someone had already outbid them, or if the item was no longer available. Bidders were notified as higher bids came in and were given the opportunity to up the ante.

Those with winning bids were contacted by the museum. Their auction registration information was verified, and the museum arranged for payment and delivery.

By the fourth day of the auction, Bell said, she was pleased with the response. All the items that had been offered had been sold at prices at least 150 percent higher than the minimum bids, she said.

"It opens all kinds of possibilities," Bell said, adding that other science museums might be interested in the software for their own fund-raising auctions.

MIT's 1951 'Whirlwind,' at The Computer Museum

Tenenbaum agreed. "I think the potential is tremendous for auctions on the Internet. It's a tremendously interesting business model."

—*Judith H. Bernstein*

Business Week

April 11, 1994

AUCTIONING OFF
RELICS OF THE COMPUTER AGE

Every die-hard Internet fan knows that no matter how eso-
teric a computer question or topic may be, chances are it's
covered somewhere on "the Net." And soon, computer trivia
buffs will be able to own eclectic pieces of computer history
via—what else?—the Internet itself.

Beginning on Apr. 22, the Boston Computer Museum will
conduct a charity auction via the Internet's vast e-mail net-
work. The Computer Museum will auction more than 60 lots of
goods, services, and computer memorabilia to raise money for
its educational programs. Some of the items on the virtual
block: An evening playing Space Wars—the mother of all
video arcade games—at the museum, an original module from
MIT's 1952 Whirlwind computer, and a selection of software
and hardware for current computers, such as a 20-inch color
computer monitor. The auction is open to anyone who can
send Internet e-mail to "auction-info@auction.tcm.org."

Der Speigel

March 21, 1994

Auktion
im Netz

Versteigert wird am PC-Bildschirm. Gebote können auf der Computertastatur eingetippt werden: „Die erste Internet-Auktion", bei der das weltumspannende Datennetz (mehr als 20 Millionen Benutzer) als „virtuelle Auktionshalle" dient, hat jetzt das Computer Museum in Boston (US-Staat Massachusetts) angekündigt. Für die Versteigerung, die vom 22. bis zum 29. April stattfindet, wird ein vernetzter Museums-PC zum „On-line-Auktionator" umfunktioniert. im Angebot sind originale Hardware-Devotionalien aus der Geschichte der Computerrevolution. Ersteigert werden können beispielsweise der Pappmodell-Computer „Cardiac", der in den Bell-Laboratorien des AT&T-Kon-

zerns entwickelt wurde (Mindestgebot: fünf Dollar). oder das neue Software-Paket „Ethernet Sniffer", das die Funktionssicherheit von Computernetzen garantieren soll (Mindestgebot: 3000 Dollar). Gebote können als elektronische Post (E-Mail) oder auch per Telefon eingereicht werden. Der Meistbietende bei der Museumsauktion erhält darüber hinaus einen Siegerpreis, der von Microsoft-Chef Bill Gates überreicht wird: das Computerspiel-Set, das sich Gates für den Fall wünschen würde, daß er „auf einer einsamen Insel (mit Stromanschluß) strandet".

PANORAMA

JUNE 6-19, 1994

As the New England Aquarium celebrates its silver anniversary, residents and visitors join in acknowledging its immeasurable contributions to the preservation and understanding of aquatic life.

From "real" fish to El-Fish at The Computer Museum

If you leave the Aquarium longing for that great fish tank you had as a child yet aren't sure you can handle the responsibility of being a pet owner, the Computer Museum's Electronic Aquarium exhibit, El-Fish, will fill the void. You'll be riveted to the screen as you control a computer generated aquarium where you not only design the tank itself but every detail within it — including the fish. This innovative and colorful graphics-rendering technology, developed by Russian scientists, uses genetic algorithms to create millions of seemingly three-dimensional fish that swim and interact like the fish you visited at the Aquarium. You may even breed your own by choosing "parent" fish and animating them for your tank which you may decorate with ocean objects ranging from coral reefs, treasure chests, plant life or even a scuba diver. If you're daring, add a cat's paw that sweeps into the tank unexpectedly.

After you've had your fill of fish, wander into an exhibit designed to gain entry into seemingly inaccessible worlds. In virtual reality technology, changing your vantage point on the world, as well as your way of interacting with it, is as simple as using a television remote. Imagine walking into your television set to see how it works. Imagine walking into your own body to understand cell biology. All this, and undoubtedly much more, is possible in the rapidly-expanding field of virtual reality (VR). Video games have introduced this concept in programs as space-age helmets transport us to an imaginary 3D alternate universe.

Create your own electronic aquarium at The Computer Museum's El-Fish exhibit.

The National Science Foundation has helped the Computer Museum conduct a research program where virtual reality is employed to expand the concept of informal learning. As a result, the microscopic world of cell biology is explored through VR. Visitors don the special helmet and, visually, "walk into" an empty, six-foot neuron, muscle or intestinal cell. Through animation, sound effects and a hand-tracker to manipulate objects, visitors are guided through the process of building a cell by placing cell components known as organelles. As the organelles are correctly placed, the cell responds, representing communication between the organism and the"student". The museum enhanced the experiment with a tutorial where cells are explained in more detail and the sound effects and visual aids used within the program are introduced. The response has been overwhelming. Experience this mesmerizing exhibit through *June 30*.

Refer to *Museums* under *Currently* for information on both museums.

The Official Guide To Boston

Boston is young at heart

BY JON MARCUS *8678 Computer*
Free Press Special Writer

Museums go all out for kids

Museums in Boston aren't free, but they go out of their way to welcome children.

As much a part of the city as the mallards are the surly sea lions that put on a free show in their tank outside the New England Aquarium. Inside, visitors follow a ramp that wraps around a four-story, 187,000-gallon saltwater tank teeming with sea life, from sharks to giant sea turtles.

Kids can hold a hermit crab or pick up a sea star at a hands-on tide pool, or stare down the 6-foot-alligators in the Everglades exhibit that was opened this year.

Whale-watch and harbor cruises leave from Long Wharf, next to the aquarium. Try the brown-bag lunch cruise that's just $1. The aquarium itself runs whale watches and a scientific tour aboard a real research vessel; passengers can help take water samples or set lobster traps.

The Children's Museum, the nation's second-oldest, fools kids into thinking they're having fun when they're actually learning something; it pioneered hands-on exhibits that unravel such mysteries as how toilets flush.

Next door at the Computer Museum, children and adults can try out virtual reality, pilot a DC10, meet the original R2-D2 from the "Star Wars" movies and literally walk through the world's largest computer to see how it works.

Children can make giant waves, find out how much they would weigh on the moon or have a conversation with Tyrannosaurus Rex at the Museum of Science. But, like generations before them, most are content to watch the hatching chicks in the 40-year-old Giant Egg Incubator. Adults will like the transparent but fully functional ATM in the lobby.

TIPS FOR CHILD'S PLAY IN BOSTON

8678

If you have children and you're planning to take them to Boston, here are some helpful things to know.

■ The "Kids Love Boston" guidebook and **Boston Family pass** are available from the Greater Boston Convention & Visitors Bureau, 1-617-536-4100, 8:30-5 weekdays. Guests who have their family pass validated by a participating hotel get discounts on food, tours, shopping and museums, including second-child-free admission

there are often long lines at the ticket counter. Call 1-617-723-2500 during museum hours.

■ **The Children's Museum** is open daily except Monday, 10-5, until 9 Fridays. Admission is $7 for adults, $6 for children under 6 and $2 for under 2. Call 1-617-426-8855 during museum hours.

■ **The Computer Museum** is open 10-6 daily. Admission is $7 for adults, $5 for children. Call 1-800-370-CHIP during museum hours.

■ **The U.S.S. Constitution Museum** is open daily 9-6. Admission is $3 for adults, $1.50 for under 18, free for under 5.

travel
journal

8078

Boston: Better than ever

The basics that make Boston a great city to visit—its history, its walkability, and the Public Gardens fowl made famous by Robert McCloskey, author of the children's book *Make Way for Ducklings*—never change. But there are always enough new and updated attractions to warrant a repeat visit.

Of course, many of Boston's longer-running attractions are well worth a visit. To learn just how much you trail behind your kids in technological savvy—and to rectify that a bit—The Computer Museum (617-423-6758) is a must-see. Even technophobes will enjoy exploring the walk-through computer.

May 1994

MUSEUMS

THE COMPUTER MUSEUM:
From calculation engines to PCs on Beantown's waterfront

By Frederic Paul

Dedicated to documenting and displaying the artifacts of the Information Age, the Computer Museum also demonstrates and teaches.

On a Boston wharf, sandwiched between a lobster shack and a giant milk bottle, sits a unique demonstration of the seductive power of the PC. Stroll through the Computer Museum's amazing 50-times-scale walk-through computer that actually works, and enter Tools & Toys: The Amazing Personal Computer, a $1 million exhibit where you can ride through virtual reality, shoot a commercial starring yourself, make multimedia music, play unique games, and even create personalized sou-

venirs—all in about an hour.
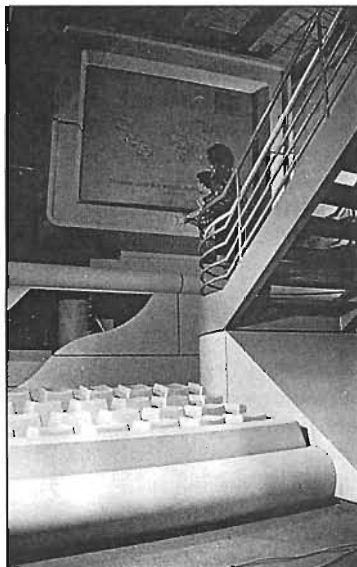
Tools & Toys uses standard hardware—all donated—and special adaptations of existing commercial software along with special custom applications to show that "computing can be fun, even if you've never done it before," says Oliver Strimpel, the museum's executive director.

The exhibit "was definitely geared to young children and families," agrees exhibit director David Greschler, "but it ended up appealing to power users and peo-

ple in the computer industry" as well. With seven distinct environments housing more than 35 stations, "the breadth of the exhibit pulls them in," he says.

The environments include Making Pictures, Writing, Making Sounds, Adding It Up, Exploring Information, Playing Games, and Sharing Ideas. The key to the project's success is that instead of watching static demo programs, visitors take control. "The exhibits are three-dimensional experiences," says Greschler. "The experience is the message."

One of the most popular exhibits is Be Your Own Band, which combines a MIDI (Musical Instrument Digital Interface) system, keyboard, and drum pad to let visitors create their own musical compositions. You can lay your own tracks over rock, funk, classical, or salsa backgrounds to create multilayered instrumentals. A Macintosh controls the tempo, pitch, and volume.

Another station, called the Virtual Reality Chair, exemplifies the PC's ability to create whole new worlds. The station offers a swivel-chair voyage through an imaginary landscape, complete with virtual mountains, a virtual house, and even a virtual dog that barks if you come too close. The first and still one of the few permanent virtual-reality exhibits in the world, the Virtual Reality Chair is a unique compromise between the simplicity of computer-game simulations and the complex, high-powered requirements of full-scale virtual reality.

The SampleStick shows how computers can match disparate elements to build something new. Visitors use a joystick to compose new music from digitized samples of prerecorded compositions, just as rap D.J.'s use sampled sounds to create new hits. A remarkably hip selection in-

cludes bits from many of the leading rock and pop stars of the last half century.

The individual stations are only part of the story, however. The sweeping curves of brightly colored walls, supergraphics, and glass bricks make the exhibit look like a computer playground," claims exhibit designer Ted Groves. "The playground feeling comes from the fact that most of what you see on the screens—including the colors—goes on the walls, goes in the paint."

Tools & Toys began in the early 1980s as the brainchild of Boston Computer Society founder Jonathan Rotenberg, and BCS volunteers played a big role in programming many of the exhibit stations. Funding was supplied by a who's-who list of PC luminaries, including Bill Gates, Steve Wozniak, Mitch Kapor (the Kapor Family Foundation), Apple Computer, Digital Equipment, and many others.

The Computer Museum spent six months testing each station in its exhibit lab, looking for bugs and making sure people "got it." Many stations were changed during the evaluation period, recalls Greschler. To make sure the exhibit appealed to its target audience, the museum asked a group of eighth graders from Boston's Martin Luther King middle school to act as consultants, checking that the directions were clear and the stations exciting and challenging.

With about 25,000 square feet of exhibition space, the Computer Museum receives some 130,000 visitors annually. Founded in 1982 as a nonprofit institution for collecting artifacts of the Computer Age, it has since expanded into an entertaining, interactive, and constantly growing learning center that charts the evolution, technology, and application of computers. ∞

One for the Road
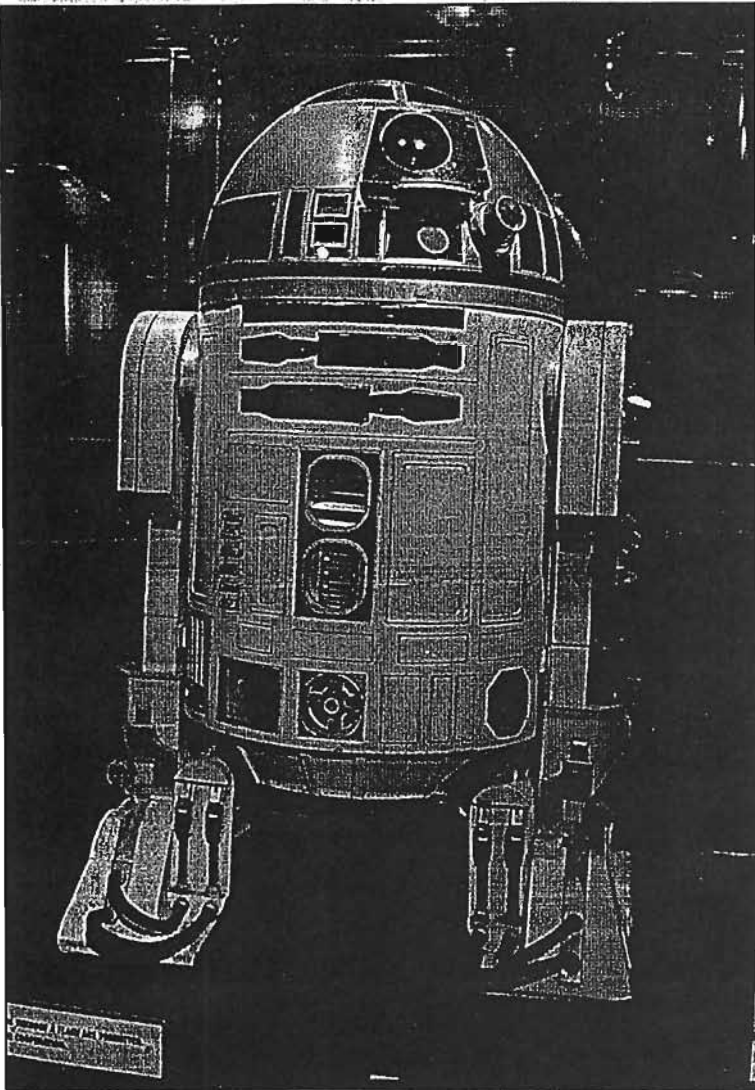
Syd Kearney / Chronicle

In a museum filled with interactive exhibits, there's one wallflower that draws a crowd. It's "R2-D2" of *Star Wars* fame. The squatty computer hero is not a machine, but a costume worn by a petite actor.

Tap into electronic fun at Computer Museum

8078

By SYD KEARNEY
Houston Chronicle Travel Writer

BOSTON, Mass. — You don't need a modem to tap into the electronic playground known as The Computer Museum. A sense of fun and a few free hours will connect you with the world's first museum dedicated to robotics and the electronic brain.

The Computer Museum, while adjacent to Boston's Children's Museum, is definitely not just for kids. In fact, during a December visit, playful adults outnumbered children two to one.

The museum, in a nondescript warehouse adjacent to the touristy Boston Tea Party site, is accessible by a glass-encased service elevator. Riding to the warehouse's fifth and sixth floors, visitors get a dramatic view of downtown Boston and the wharf area.

Everything is big at The Computer Museum. A humongous floppy disc. A giant mouse that encourages kids to work it with their bellies as they climb on top. A massive keyboard nearby requires two hands to press down the keys. These pieces of hardware are linked to a large video display and are part of a program that computes travel distances.

Spread throughout the museum are computer work stations where visitors can mouse around with simple games such as helping a man find his dog and elaborate programs such as designing an ecosystem.

Everywhere adults and children are taking a seat and tackling a task. Visitors can create a cartoon or put their photo in front of the Taj Mahal. They can listen to music and decide: Is it Mozart or just a good computer-generated sound-alike? Visitors also can create electronic art or challenge a chess master.

Even folks who consider themselves computer illiterate quickly master the keyboards in this silicon sandbox. Helpful staffers are around to rescue the confused.

A fine exhibit, *People and Computers: Milestones of Revolution*, traces the evolution of computers. From humble beginnings in the 1930s as the U.S. government strove for efficiency with the keypunch machine to the introduction of the personal computer in the 1980s, computer history comes to life through photos, hardware and song.

The '90s, according to the exhibit, will be known as the era of the "Incredible Shrinking Machine."

The Computer Museum is located at 300 Congress St. To get there, take Boston's Red Line subway to South Station and walk across the Congress Street Bridge. Winter hours are 10 a.m. to 5 p.m. daily. The museum is closed Mondays. Admission is $7 for adults, $5 for students and senior citizens. Children age 4 and under are free. Call (617) 426-2800 for information.

Newsweek

men, women & computers

ROBERT ZIMMERM

Who Holds the Key to the E-Mailbox'

Computers: Messages are not always secret

About a third of American families have at least one computer, but most of those are purchased and used by males. It may be new technology, but the old rules still apply. In part, it's that male-machine bonding thing, reincarnated in the digital age. "Men tend to be seduced by technology itself," says Oliver Strimpel, executive director of The Computer Museum in Boston. "They tend to get into the faster-race-car syndrome."

-Newsweek   May 16, 1994

Under the federal Electronic Communications Privacy Act of 1986, E-mail gets most of the same protections as letters and phone conversations. But the issue of what employers can read "is still up for grabs," says David Greschler, director of exhibits at the Boston Computer Museum. Greschler is preparing a show on computer networks and privacy. "A company can say, 'We own everything you write'," Greschler says. "If you're using your company's e-mail system, you're using their resources."

- Newsweek   December 20, 1993

Financial Times

March 26-27, 1994

Sitting at the keyboard and messaging the US President gives a sense of empowerment which some find overwhelming. At the Computer Museum in Boston, where an exhibit allows visitors to send E-mail to Bill, I watched one voluble character rendered wordless at the keyboard, typing only "Dear Mr President, How are You? Geoffrey". Of course, Clinton is not sitting at his screen personally replying to the 1,000 E-mail messages he receives each day but White House officials insist that everyone gets a reply "after appropriate consideration".

Describing Internet as the "world's largest adhocracy", Oliver Strimpel, executive director of the Computer Museum, says: "We are seeing a fundamental change in the nature and control of information". Ironically, for something so anarchic, its origins lie in military thinking. It was developed as a communications network for the Pentagon able to withstand nuclear attack. It has no central command and messages are chopped into small packets of data, routed by the network then reassembled at their destination.

グッゲンハイム美術館では、ライト
設計によるあの特殊な空間を意識し
た展覧会シリーズを開催した。作品
と空間は相乗作用を起こすか？
文化施設は多様な試みを続行中だ。

今号の話題『都市の施設』
特集／文化施設の新しいかたち 2

Photograph: Jack McWilliams

年間15万人近い来館者の約半分が児童。12才の利発な子供を
基準に、大人も楽しめるよう配慮されている。

Photograph: Neal Hamberg

C
Computer Museum
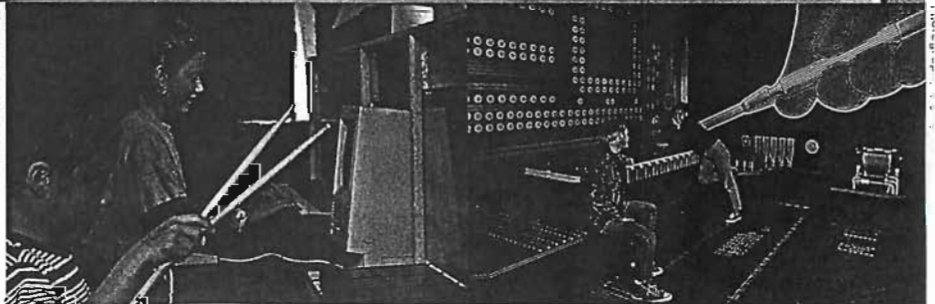
実際に手を触れてパソコンの能力の多様性を体験する。

デスクトップ・コンピュータの50倍模型の内部に入る。

About This Issue:

In this special beginning-of-summer issue we focus on a significant and fascinating trend in the education world—the ways in which the textbook publishing industry is embracing technology. We report on the many alliances that have formed between text and software publishers over the past year and spotlight some of the technology products you can expect to see from the leading textbook companies in the near future.

For those of you who are attending this month's NECC conference in Boston (or who are thinking of visiting Massachusetts this summer), we also introduce you to the Boston Computer Museum, the only museum in the world devoted entirely to computers. Finally, to help you get started on plans for the coming school year, we've included a number of announcements and information on new products of special interest.

Happy reading, and have a wonderful summer!

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Photo courtesy © The Stock Market/LIGHTSCAPES 1994

The Computer Museum:

Boston's Best Attraction for Educators Interested in Today's Technologies

By Susan Brooks
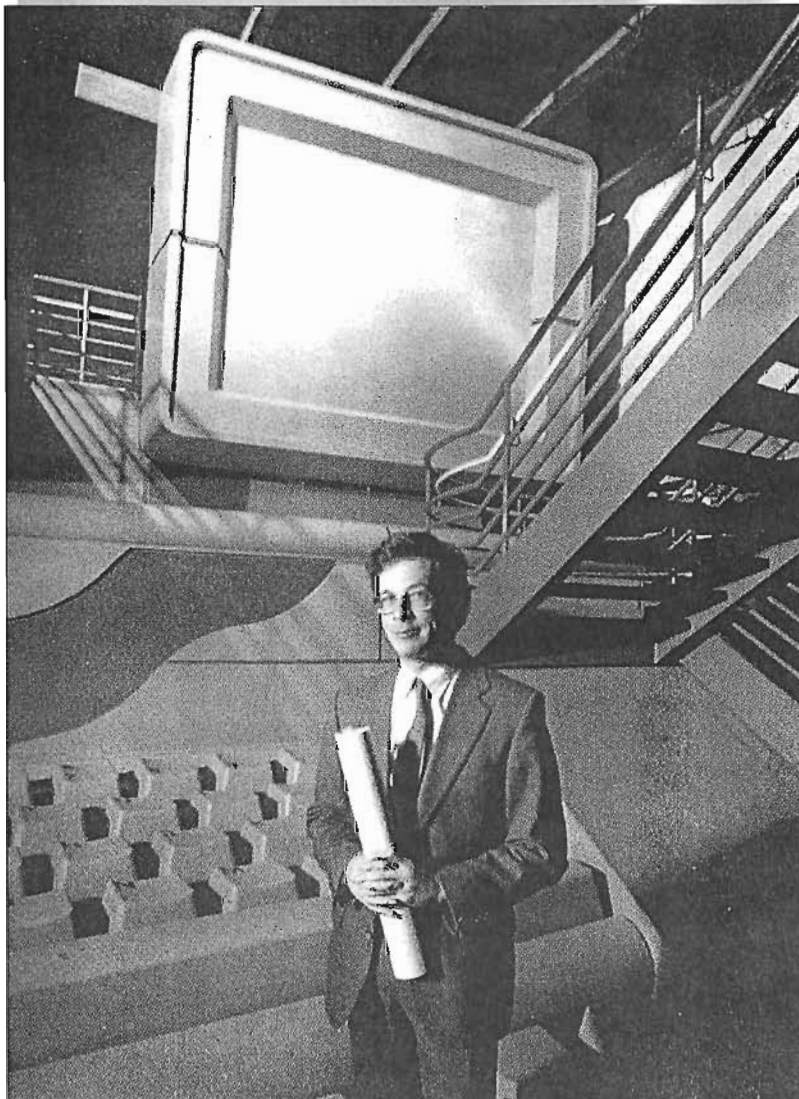
The Walk-Through Computer™ was the idea of
Computer Museum Executive Director Oliver Strimpel.

It's the only museum in the world devoted entirely to computers.

What museum makes it possible to experiment with leading-edge technologies, provides electronic access to the President and Vice-President of the United States, and boasts 135.000 visitors yearly? The answer is the Computer Museum of Boston, Massachusetts—the only museum in the world devoted entirely to computer technology and its impact on society.

The seeds for the museum were originally sown in 1974 when Kenneth Olsen (founder of DEC) and Robert Everett (then president of Mitre Corporation) saved M.I.T.'s Whirlwind computer from the local dump. Encouraged by Gordon and Gwen Bell (he worked for DEC; she was a collector of early counting devices and later became the first curator of the museum), the collection grew. The museum was incorporated in 1982 and moved to its present location adjacent to Boston's Children's Museum in 1984.
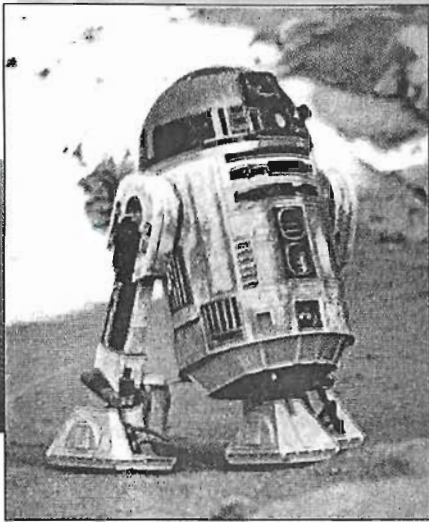
"R2-D2"™ from "Stars Wars" joins The Computer Museum as "Celebrity Robot-In-Residence."

Visitors can send electronic mail to President Clinton and Vice-President Gore.

There are four permanent gallery displays in the museum. *The Walk-Through Computer*, designed to be 50 times larger than an actual system, allows visitors to see how computers actually operate by exploring a two-story-high working model of a computer which has a functional keyboard and mouse. It is possible to run an application program that gives a tour of the world, and to look inside the computer to see a simulation of how data flow through the computer.

Tools and Toys was designed to allow visitors to explore the many capabilities of computers. Thirty-five computer "stations" allow visitors to try out software in the areas of games, virtual reality, desktop publishing, multimedia, graphics, and electronic music. Visitors can even use the technology to create souvenirs to take home.

People and Computers: Milestones of a Revolution traces the history and impact of the computer by focusing on the milestones that mark the computer's evolution from the 1930s to present-day. Visitors walk through "time tunnels" to view the gallery.

Finally, *Robots and Other Smart Machines* encourages visitors to explore the question: Can machines
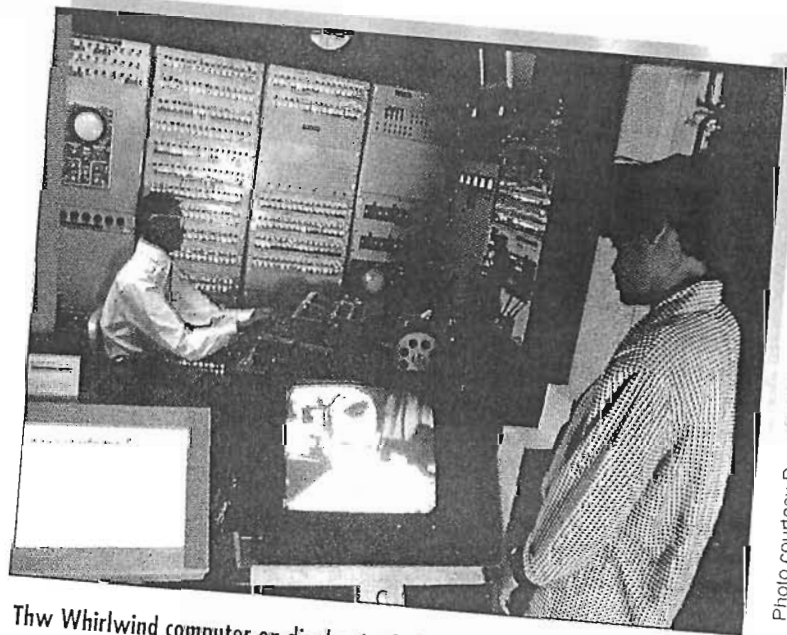
Thw Whirlwind computer on display in the PEOPLE AND COMPUTERS exhibit at The Computer Museum, Boston.

really think like people? After being greeted by R2D2 of *Star Wars* fame, visitors are invited into a robot theater for a ten-minute multimedia presentation featuring 25 robots. Thirty interactive computer stations provide opportunities for visitors to experiment with artificial intelligence, artificial life simulations, and related activities.

Educators Are Invited to Visit the Computer Museum Free!

"With its inspiring exhibits and informal learning style, the Computer Museum can be the place where anyone—especially those with little access to computer technology—can explore how computers might personally help them," says Marilyn Gardner, the Museum's new Director of Education. Gardner will present a talk, "The Computer Museum: Supporting Teachers Throughout the Country," as part of a NECC panel on Wednesday, June 15, at 11 a.m.

"Most school districts don't have the resources to invest in the latest technology or professional development programs to help teachers bring these tools into their classrooms," says Gardner, who has experience as both a teacher and former director of technology for Boston's public schools. "But educators need to explore the latest technologies and their potential as learning tools." Professor Mitchel Resnick, a technology and learning specialist at the M.I.T. Media Lab, adds that the Museum enables educators to sample one on one a "vast array of emerging technologies." Since the exhibits are updated regularly, teachers can experiment with the newest hardware and applications, while also being able to explore computing history. They can also reflect on how this extraordinary tool can be better used in teaching.

Gardner, who is active in both the local and national educational communities, wants to expand the Museum's impact "by creating innovative programs and materials to take the excitement of the Museum's informative, exhibit-based learning into many settings." Plans are underway to make special projects and exhibits available online to serve educators and students who cannot visit the Museum. The first of these experiments will occur in November with the opening of the Museum's exhibition on global computer networks.

Right now, the Museum offers a variety of educational programs and materials:

● **Group visits** allow educators and their students to explore the questions: How do computers work? How have computers evolved? Can machines behave and think like people? What can computers do? Current applications from music and virtual reality to math and science programs are featured, as well as the world's most comprehensive collection of computer artifacts. Special presentations and tours are available.

● The **Overnight Program** enables kids of all ages to camp out in the galleries, including the Walk-Through Computer. Kids participate in games and educational activities, make new friends, and "learn in a playful way how computers work," claims one FutureKids leader.

● **Teacher Workshops**—such as special programs developed with Cambridge (Mass.) College and TERC—help educators feel more comfortable with innovative uses of computers in teaching science and technology.

● In **Joint Programs**, the Museum makes its resources available to other institutions—such as the Wang Center for the Performing Arts, where 150 students built their own robot models after watching *Star Wars*. The Museum has also developed a workshop with Girls, Inc., of Lynn, MA, to introduce girls of diverse backgrounds to computing technology.

● The **Computer Clubhouse**— an experimental learning environment—offers underserved young people, ages 10-16, an opportunity to develop skills by applying the latest computer technology to their own projects. With committed peer and adult mentors to guide them, participants learn about the use of computers rapidly in a way that could affect the course of their lives. An interactive software tour of the Clubhouse is being developed and tested for dissemination in 1995 to community centers, after-school clubs, schools, and other settings. The tour offers project examples and information enabling people to design similar computer-based projects at their own sites.

● An **Educational Video**— "How Computers Work: Journey Into the Walk-Through Computer"— explains how computers work by taking viewers inside the Museum's giant working model of a personal computer. In this entertaining video, four teenagers show how major computer parts work together by acting out the roles of different components themselves. Ideal for grade school through college audiences, the 26-minute video has brought the excitement of the one-of-a-kind exhibit into thousands of classrooms across the country.

● An **Educational Activities Packet** geared to students, ages 8-12, brings the engaging quality of the Museum's interactive exhibits and hands-on approach into the classroom with practical suggestions and activities about the workings, evolution, applications, and impact of computers. Designed for classrooms with or without computers, it can be used alone or to supplement Museum visits.

For information on group visits, phone (800) 370-CHIP; for video and educational activities packet, (617) 426-2800, ext. 307; and for the Computer Clubhouse, (617) 426-2800, ext. 347.

These exhibits are a good foundation on which to build, but the world of technology is in constant flux. In order to remain on the cutting edge, the museum also offers a series of temporary exhibits. On display now through June 30, *Virtual Adventure: Explore a Human Cell* allows museum visitors to explore a 3-D "virtual universe" through the use of a head-mounted display and hand device. Partially funded by the National Science Foundation, the display was designed to test the potential effectiveness of virtual reality as an educational tool in teaching science. When a visitor dons the head-mounted display (which includes goggles, earphones, and a tracker), she finds herself with the sensation of being in an actual 3-D environment. Using the hand device,
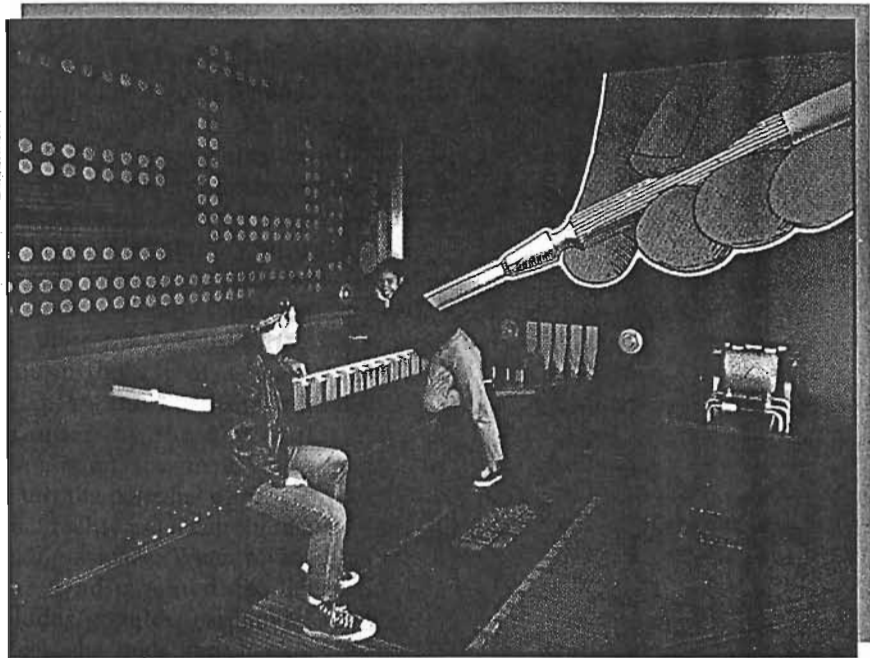
Teens explore the Walk-Through Computer exhibit.

Tools and Toys offers 35 workstations for games, virtual reality, and even souvenirs.

she can then interact with the virtual world in front of her eyes by "touching" a human head, arm, or stomach, which then transports her "into" a neuron, muscle, or intestinal cell. Individual components surround the cell and are explained through visuals and sound effects. As the visitor "places" these components into the cell, they come to life and demonstrate how the cell functions.

This coming November, an exciting new exhibit will be opening—the first in the world to focus entirely on computer networking. The goal of its creators is to make computer networking understandable and to examine how it affects society.

Two prototype activities from this exhibit have been on the museum's floor since the fall of 1993. *Letter to the White House* enables visitors to send electronic mail to President Clinton and Vice-President Gore. And *Networked Puzzle* enables four players to work cooperatively over a computer network to solve a puzzle—by finding out where puzzle pieces are located and transferring them to the players who need them.

When the full exhibit opens in the fall, visitors will be able to view a film that explains the basics of networking; to try out various networking applications; to use pre-configured hardware, copper, and fiber optic cable to create a network; and to explore questions of ethics about networks. Anyone who has a computer and modem will have partial access to this exhibit, since it will contain an online component that will allow outside users to "chat" in real time with museum visitors.

The Computer Museum is located at Museum Wharf, 300 Congress Street, Boston, MA. Admission: Adults, $7; students and seniors, $5; children under age four and members, free. Teachers are also admitted free with school identification. Summer hours: daily 10 a.m. to 6 p.m. For more information, call The Talking Computer at (617) 423-6758.

■ *Susan Brooks is Assistant Principal at Nicolas Junior High School in Fullerton, CA.*

Photo courtesy Fay Foto

Tuition

$250 per week includes all activities and morning and afternoon snacks, from 9 to 4:30. $25 discount for Family Members of The Computer Museum. Call (617) 426-2800 x376 for membership information.
Extended Day Option - Monday - Friday, 8-4:30 p.m.: $100 additional.

Payment and Refund Policy

A $125 deposit per camper must accompany application. Refunds will be made up to 30 days before session, minus a $25 cancellation fee. Final payment is due one week prior to camp. The Computer Museum will be unable to refund or reduce tuition for late arrivals or early departures.

$ _____

Check enclosed

$ _____

or Amount Charged

_____

Name on Card

○ Visa ○ MasterCard   Expiration Date: _____

_____

Card Number

_____

Signature of Card Holder

The
Computer
Museum

300 Congress Street
Boston, Massachusetts
02210

One Week Sessions
Limited to 15 Campers

The Computer Museum
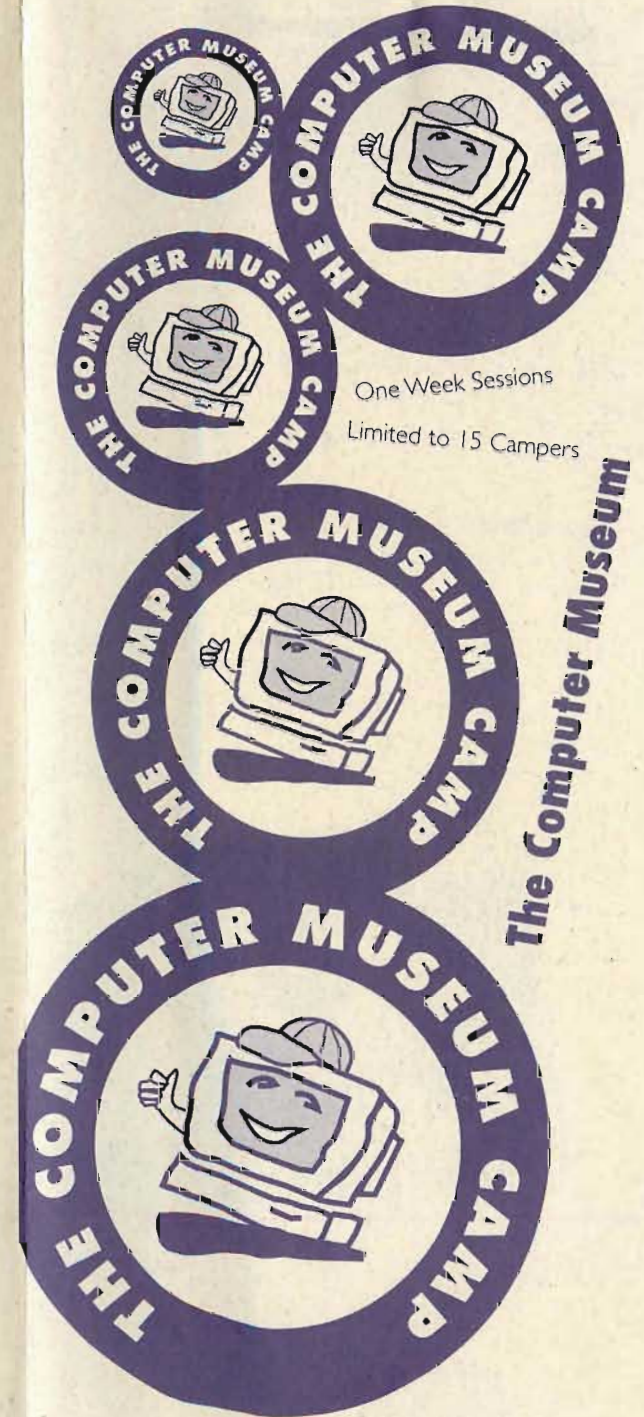
A Unique Educational Playground

The Computer Museum Camp will play a vital role in inspiring and educating your child about technology. The Computer Museum will become your child's educational playground for a week, with more than 125 dynamic hands-on exhibits. Your child's experience at The Computer Museum Camp will provide a compelling complement to traditional educational efforts.

Learning will be an active adventure, and campers will become comfortable with a broad range of technologies. Our goal is to help develop strong personal skills, self confidence and creative thinking abilities.

Dates, Times, & Prices

One week sessions for campers age 8-15 start Mondays on August 8, 15, 22, and 29, 1994. Camp activities: 9:00 - 4:30 p.m. (tuition: $250) with an option for extended activities from 8:00 until 5:30 ($100 additional charge). Family Members of The Computer Museum receive a $25 discount. Call (617) 426-2800 x376 for information on membership.

Daily Activities

At The Computer Museum Camp, campers will learn how to use professional software for design, exploration and experimentation. They will choose from numerous activities and become users, designers and creators of technology. Campers will be provided with resources, materials, and tools to develop projects in such areas as:

Graphics and Animation
Telecommunications
Robotics
Lego Logo™
Electronic Publishing
Image Processing
Computer Sound and Music
Computer-Aided Design
Computer Simulation
Computer Game design
Interactive Multimedia
Virtual Worlds

The Computer Museum Camp Philosophy

The Computer Museum Camp provides a learner-centered, informal educational approach that encourages campers to discover their interests and apply their own ideas. The Computer Museum Camp is a vibrant environment that enables your child to explore amazing technology through our innovative, fun and inspiring exhibits and programs.

Location

The Computer Museum is located on Museum Wharf across the channel from the Financial District and South Station and next to The Children's Museum.

Application

The Computer Museum Camp

300 Congress Street, Boston, MA 02210
1-800-370-CHIP

Camper's Name

_____
First   Last

_____
Street Address or P.O. Box No.

_____
City, State, Zip Code

_____
Home Phone

_____
Birth Date

_____
Sex: ◯ F   ◯ M

_____
Entering Grade

Name of Parent / Guardian

_____
First   Last

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Work Phone   Home Phone

The Computer Museum Camp is for children ages 8-15 and runs from 9:00 a.m. until 4:30 p.m. Limited to 15 campers.

Please check session:
- ◯ August 8 -12, 1994
- ◯ August 15 - 19, 1994
- ◯ August 22 - 26, 1994
- ◯ August 29 - September 2, 1994
- ◯ December 26 - 30, 1994
- ◯ February 20 -24, 1995
- ◯ April 17 - 21, 1995

(over)

For more information on The Computer Clubhouse, please contact:

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Program Software Developer
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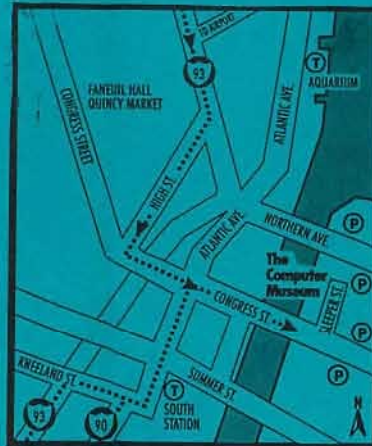
The Computer Clubhouse
at The Computer Museum
300 Congress Street
Boston, MA 02210
617.426.2800 X423

The Computer Clubhouse

@The Computer Museum

The Computer Clubhouse is a model

learning environment where young people explore their own interests and become confident learners.

At the Clubhouse, youth from underserved communities develop computer-based projects inspired by their own ideas. The Clubhouse includes state-of-the-art computers and software. It is a diverse community of mentors and members working together to explore and create exciting projects using computers.

In The Computer Clubhouse young people:

- build robots

- develop interactive multimedia

- create art and animations

- design games

- create music

- perform science experiments

- create newsletters

- and the list keeps growing.

Members
Members range in age from 10 to 16 and represent the diverse communities of Boston. Members spend days, weeks, even months working on projects they find personally meaningful. Through their participation they develop important skills for college and career.

Mentors
Mentors are students and professionals in art, music, engineering, education, and a variety of other fields. Mentors are available to answer questions and support exploration by participants.

Hours
Tuesday through Friday from 2:00pm until 5:30pm

Saturday from 10:00am until 4:00pm.