

**Calendar of Events At a Glance for October**  
For details see inside

<u>Event Sponsor</u>	<u>Date of the Event</u>	<u>Location of Event</u>	<u>Web Site: http://www.</u>
BostonSiggraph	Oct. 2, 1996	Polaroid, Waltham	v-site.net/siggraph-ne
<b>*GBC Monthly Meeting*</b>	<b>Oct. 17, 1996</b>	<b>BBN, Cambridge</b>	<b>acm.org/chapters/gbc</b>
IEEE/CS	Oct. 17, 1996	Mitre, Bedford	cs.uml.edu/Boston-SPIN
Boston SPIN	Oct. 15, 1996	GTE, Needham	NA
Boston SIGCHI	Oct 7, 1996	Lotus, Cambridge	NA

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**The Greater Boston Chapter of the**

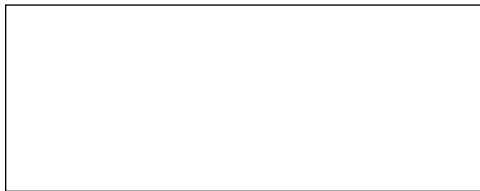


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# The Real Times

Vol.35 No.2

[www.acm.org/chapters/gbc](http://www.acm.org/chapters/gbc)

October 1996

## Building Virtual Teams with Computer Mediated Communication Systems

With Dr. Merrill E. Warkentin Associate Professor of MIS, Northeastern University  
Thursday, October 17, 1996

Time Light refreshments and informal discussion from 6:30 to 7:00 PM.

The formal part of the meeting starts at 7:00 PM.

The Newman Auditorium at Bolt Beranek and Newman (BBN), 70 Fawcett Street, Cambridge, MA

### Meeting Overview

Organizations are forming virtual teams of geographically distributed knowledge workers to complete workplace tasks. Various computer-mediated communications systems (CMCS) have been developed to facilitate effective collaboration between team members at remote sites. These various systems will be briefly presented and categorized. At Northeastern University, we have developed a CMCS called "MeetingWeb" (tm), an asynchronous computer conferencing system which provides textual communication capabilities. MeetingWeb is a moderated web-based bulletin board which allows participants (who are issued passwords) to post topics and comments any time day or night, thereby facilitating team collaboration. The moderator can "seed" the conference with interesting or provocative topics. Participants may also begin their own topics—they can post documents online to be read by others. Or a user may simply read the comments of others without contributing. This creates a 24x7 virtual discussion in which anyone can participate even if they are normally shy. We initiated a project to create virtual teams composed of MBA students at Northeastern University

and "managers-in-training" at other universities around the world. The teams engaged in several research projects for which they were told to use the web search engines to find information pertaining to assigned topics in information technology. The students at both universities were encouraged to organize their teams and to assign responsibilities via the virtual conference or via email. The final reports were posted on the conference on-line rather than submitted on paper, and the reports contained actual hot hyperlinks to the web sites they uncovered in their research. Their work was also graded on-line, with temporary easy detours to the websites they placed (linked) into their reports.

An instrument (consisting of 26 items) was designed to assess students' experience with the system; it included a 13-item satisfaction measure specific to CMCS. Results of this research will be presented and discussed. It was determined that organizational factors such as "social presence", balanced composition, and training have a greater influence on outcome than technological factors.

We will also explore the communication process of remote groups who collaborate using CMCS. Finally, guidelines for creating and managing virtual teams will be presented.

(continued on the next page)

### Directions to Bolt Beranek and Newman (BBN)/Recorded directions: (617) 873-4567

**From Route 128, Lexington:** Take Route 2 inbound. The four-lane highway narrows to two lanes near Route 16. At the traffic light bear right onto Alewife Brook Parkway. Proceed past shopping centers to the Fresh Pond Rotary. Take the first right onto Concord Avenue. Fawcett Street is one block down Concord Avenue, on the right.

**From the Mass. Pike:** Take the Pike inbound to the Cambridge/Allston exit. Exit onto the Cambridge off-ramp and take Cambridge Street. Turn left onto either Storrow or Memorial Drive. (Storrow Drive is on the Boston side of the Charles River and Memorial Drive.)

**From Storrow and Memorial Drives:** Take Storrow or Memorial Drive west: follow signs to Route 2,3,16. Remain on 2. The road will become narrow and winding. This is the Fresh Pond Parkway. Several car dealerships and Fresh Pond Seafood will be on the right. At the 1st rotary, take the third right onto Concord Ave. Continue straight at the second rotary. Fawcett is one block further on right. Once on Fawcett St. the Newman Auditorium is about 1/2 block, on the right. Park in the lot on the right side of the street; the lot is adjacent to the auditorium building.

**Public Transportation:** Take the T to Harvard Square. From Harvard Square take the Concord Ave./Belmont Center bus. Get off at Fawcett St.

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Timely notices of events, meetings, and other activities of interest to the Chapter's Membership should be submitted by the 10th of the month before the intended issue and sent, with attention to the Managing Editor to:

**GBC/ACM, P.O. Box 465, Lexington, MA 02173.**

The Chapter's mailing list is available to related professional organizations or for commercial use. Please contact the Membership Chair at the address above when requesting mailing lists.

Subscriptions: Annual subscription cost is included in the Chapter Membership dues of \$10.00. See top line on mailing label for membership expiration date. Library subscriptions are free. Please send orders for copies to the Chapter mailing address above.

Postmaster: Address changes should be sent to the mailing address above. Allow eight to ten weeks for changes to address or membership renewal to become effective. Send old label with address modifications.

(continued from page one)

**Speaker's Biography**

Merrill E. Warkentin is Associate Professor of management information systems in the College of Business Administration at Northeastern University in Boston, MA. He is the author of over 80 articles, chapters, and books, including most recently, Emerging Information Technologies. Professor Warkentin's research, primarily involves information technology management, artificial intelligence, computer security, digital multimedia, and the World Wide Web. Dr. Warkentin has served as a consultant to numerous companies and government agencies. He has also lectured at the Army Logistics Management College and has been a featured speaker at dozens of association meetings and industry groups. He holds BA, MA, and PhD degrees from the University of Nebraska-Lincoln.

**SIGGRAPH/Boston September Meeting**

The State of Film Recorder Technology at Polaroid  
Wednesday, October 2, 1996 6:30PM (note earlier time) Polaroid 868  
Winter Street Building R-3 Waltham, MA.

Free admission Wheelchair accessible

Contacts WWW: <http://www.v-site.net/siggraph-ne>

Julie Satterfield julies@world.std.com (617) 325-5351

**Abstract**

Tim Crawford of Polaroid will present the latest on the technology and design issues of film recorders. Film recorders are devices used to write computer images to photographic media. These devices are available in a wide range of resolution, speed, price, and other parameters. Low end units are available for under \$5,000, while high end units cost well over \$100,000.

Tim will start with a general overview of what film recorders are and the basic types. He will then discuss design tradeoffs and experiences using Polaroid's models as examples. The talk will end with a look at new emerging technologies, and what kind of systems we can expect in the future.

About the Speaker Tim Crawford is Technical Manager for color film recorders in Polaroid's Electronic Imaging division, where he has been designing film recorders for some 6 years. He has worked on Polaroid Digital Palette and ProPalette models. He earned his BS degree in ChemE from UC Berkeley in 1972.

**Directions**

Polaroid, 868 Winter Street building R-3, Waltham, MA

**From 128 South:**

From 128 northbound in Waltham take exit 27B, Winter/Wyman Street. Right onto Wyman Street, follow to end. Right onto Winter Street. Stay right, follow around the reservoir. Take second Polaroid entrance, on Left. R-3 is straight ahead, parking is to the left.

**From 128 North:**

From 128 Southbound in Waltham, get off on Winter/Wyman Street. Stay right, follow around the reservoir. Take second Polaroid entrance, on Left. R-3 is straight ahead, parking is to the left.

SIGGRAPH/Boston maintains a mailing list for e-mail announcements of meetings. Send e-mail to siggraphdistrib-request@cs.umb.edu if you want be added or dropped from this list.

**Both Boston and Worcester IEEE Sections - Thursday, October 17**

**I-Structure Software Caches**

**Prof. Jean-Luc Gaudiot, University of Southern California**

**IEEE Computer Society Distinguished Visitor Meeting at 7:30 PM at A-Lobby, The MITRE Corporation, Bedford, MA.**

**For more information, contact Alan Brooks at (617) 271-6497 (abrooks@mitre.org).**

**Overview**

Multithreaded architectures have been proposed as an effective means to overlap computation and communication in distributed memory systems. Multithreaded architectures could be classified into blocking and nonblocking models based on the behavior of thread execution. In blocking multithreaded machines, like ALEWIFE, FLASH, \*FN.G., a global cache has been added in the memory hierarchy system to utilize the locality of shared global data. However, in other proposed nonblocking multithreaded models, no effective global data locality has been exploited.

In this talk, we describe our I-Structure Software Cache (ISSC) runtime system, which takes advantage of the global data locality in the non-blocking multithreaded models without any specific hardware support. The use of I-Structures also simplifies the cache coherence problem because of its inherent single assignment rule. This rule also makes some single assignment languages, like SISAL, benefit by this runtime system in their distributed memory system implementation.

Our simulation results show that our ISSC runtime system dramatically decrease network traffic by caching remote requests. With a cache block size of 8, a hit ratio of 95% could be easily achieved in the matrix multiplication benchmark program. By exploiting the global data locality, the average turn around time of

the remote requests is reduced. This also reduces the number of threads needed to keep the processors busy, hence the overall system performance improves.

**Speaker**

Jean-Luc Gaudiot holds the engineering diploma from the Ecole Supérieure d'Ingenieurs en Electronique et Electrotechnique in Paris, France, and the M.Sc. and Ph.D degrees in Computer Science from the University of California, Los Angeles. Since graduating in 1982, he has been on the faculty of the Department of Electrical Engineering-Systems, University of Southern California, where he is currently a Professor. His research interests include data-flow architectures, fault-tolerant multiprocessors, and implementation of artificial neural networks.

Dr. Gaudiot was the Systems Track Program Chairman for the 1993 IEEE Symposium on Parallel and Distributed Processing, and the Program Chairman for the 1995 Conference on Parallel Architectures and Compilation Techniques. He is currently serving as Associate Editor of the IEEE Transactions on Computers and as Advisory Board member of the IEEE Technical Committee on Computer Architecture.

This meeting is jointly sponsored by the Computer Society Chapters of the Boston and Worcester IEEE Sections. The meeting is scheduled for 7:30 PM, Thursday, October 17, at the A-Lobby of the MITRE Corporation in Bedford Massachusetts. Coffee at 7:15. Optional dinner follows. For more information, contact Alan Brooks at (617) 271-6497 (abrooks@mitre.org).

**Directions**

FROM N.H. - Take Rt. 3 South to Exit 26 (Rt. 62). Left on Rt. 62, Left at second light onto MITRE grounds.

FROM RT. 128 - Take Exit 32 (Rt. 3 NORTH). Take Exit 26 (Rt. 62), Right on Rt. 62, Left at first light onto MITRE grounds.

MITRE PARKING - Follow road to the Right past the A-Building Lobby to parking on left. Please show a photo id to the guard in A-Building Lobby.

Seminar & Book Titles	Advance Registration	Walk-in	Enter Amount
<b>Designing with HTML for the WWW</b>	\$75	\$85	\$
The HTML3 Manual of Style	\$20	\$20	\$
<b>The Java Programming Language</b>	\$75	\$85	\$
The Java Programming Language	\$25	\$25	\$
<b>Improving Personal Productivity</b>	\$75	\$85	\$
A Discipline for Software Engineering	\$35	\$35	\$
International ACM # _____		<b>Subtotal</b>	\$
GBC/ACM ID # _____ or \$10 (GBC membership is required)		<b>\$10</b>	\$
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## GBC/ACM Professional Development Seminars for Fall 1996

### Designing with HTML for the WWW

With Larry Aronson

**Saturday, October 3**

#### Overview

An introduction to authoring documents for the World Wide Web (WWW) in HyperText Markup Language (HTML) — including creating a multimedia "Homepage", complete with hypertext links to other documents and resources on the Internet.

#### Who Should Attend

Anyone interested in publishing for the WWW. Some familiarity with web browsers, the Internet, and multimedia concepts would be helpful.

#### Seminar Topics

- New Concepts and Possibilities
- HTML Elements
- Document structure
- Style elements
- Structural markup
- Anchors and links
- URLs
- Multimedia
- Tools and techniques for keeping a website under control

#### Lecturer

Larry Aronson is a systems analyst and consultant with more than 25 years of data processing experience in large and small systems and many computer languages. In 1994 he wrote the first edition of **The HTML Manual of Style**, and he recently completed the the second edition, **The HTML3 Manual of Style**.

#### Session Chair

Bernie Ganino, [jsganino@tasc.com](mailto:jsganino@tasc.com)

### The Java Programming Language

With Ken Arnold

**Saturday, October 19**

#### Overview

Java is more than a World Wide Web "Applet" language. A full function, general purpose programming language that has a robust subset of C++ functionality, Java includes integrated mechanisms for garbage collection, multithreading, and exception handling. This seminar provides an introduction to the breadth of the Java language.

#### Who Should Attend

Software developers who want to get a language overview from a member of the Java team at Sun. Familiarity with some programming language is assumed.

#### Seminar Topics

- Classes and Objects
- Extending Classes
- Interfaces
- Tokens, Operators, and Expressions
- Control Flow
- Exceptions
- Strings
- Threads
- Packages
- The I/O Package
- Standard Utilities
- Programming with Types
- System Programming

#### Lecturer

Ken Arnold, a Staff Engineer with Sun Microsystems Laboratories, is a leading expert in object oriented design and implementation. He has written extensively on C and C++ topics for UNIX Review and is the author of *The Java Programming Language* with James Gosling, and *A C User's Guide to ANSI C*. Ken is also the originator of the "curses" library package, and under pressure will admit to being co-author of the game "rogue".

#### Session Chair

Jay Conne, [conne@acm.org](mailto:conne@acm.org)

#### SEMINAR BOOK OFFERS

##### The HTML3 Manual of Style

by Larry Aronson

Suggested List Price: \$24.95

PDS Price: **\$20.00**

#### SEMINAR BOOK OFFERS

##### The Java programming Language

by Ken Arnold and James Gosling

Suggested List Price: \$ 34.38

PDS Price **\$25.00**

*(Offers only good when included with registration fee.)*

*(Offers only good when included with registration fee.)*

# GBC/ACM Professional Development Seminars for Fall 1996

## Improving Personal Productivity

With Watts Humphrey

**Saturday, November 2**

### Overview

Improvements of 25% or more in productivity and five to ten times in quality are common with Watts Humphrey's method, known as Personal Software Process (PSP). PSP uses a structured sequence of defined processes, software development exercises, and data analysis exercises. PSP is an application of software engineering principles and the Capability Maturity Model (CMM) to an individual programmer's work.

### Who Should Attend

Practicing software engineers, project leaders, software engineering managers, and software process specialists will benefit from this seminar.

### Seminar Topics

- Objectives
- Planning
- Quality methods
- Planning examples
- Quality examples
- Early experience
- PSP and the CMM

### Lecturer

Watts Humphrey is a member of the Software Engineering Institute (SEI) of Carnegie Mellon University. He established the SEI's Process Program, led the initial development of the Software Capability Maturity Model, and introduced the concepts of Software Process Assessment and Software Capability Evaluation. In 1995 he published **A Discipline for Software Engineering** to describe PSP.

Watts spent 27 years with IBM in various technical executive positions. His responsibilities included management of the first 19 releases of OS/360. Most recently, he was IBM's Director of Programming Quality and Process.

### Session Chair

Jim Byrd, byrd@acm.org

### SEMINAR BOOK OFFERS

#### **A Discipline for Software Engineering**

by Watts Humphrey

Suggested List Price: \$ 47.29

PDS Price **\$35.00**

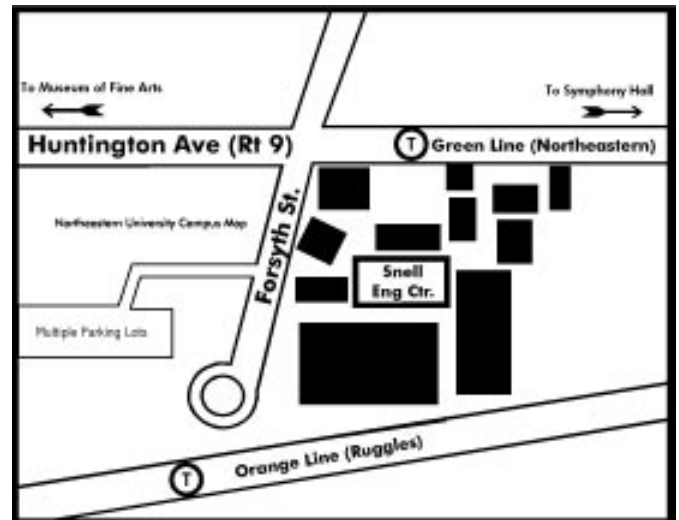
*(Offers only good when included with registration fee.)*

## GBC/ACM Professional Development Seminars

### General Information

#### Location

All seminars are held at Northeastern University's Snell Engineering Center, Boston, within walking distance of the MBTA Green Line (Arborway/ETrain) Northeastern station and the



Orange Line Ruggles station. Free parking is available.

### Schedule

8:30am - 9:00am	Registration (continental breakfast)
9:00am - 12:15pm	Morning session (break at 10:30am)
12:15pm - 1:30pm	Lunch (provided on-site)
1:30pm - 4:30pm	Afternoon session (break at 2:30pm)

### REGISTRATION FEES

Included in the \$75 fee are seminar materials, lunch, and refreshments. Registrants not current members of the GBC/ACM are charged an additional \$10, and become members of the chapter for a year. This is distinct from ACM membership. Surcharge for on-site registration is \$10. Purchase orders, credit cards, faxes and e-mail cannot be accepted. Enrollment is limited and on a first come, first served basis. Early registration must be made by a check or money order at least three weeks in advance of the seminar to receive confirmation from GBC/ACM.

### CANCELLATION & REFUND POLICY

Cancellations must be received in writing. The full fee will be refunded if the PDS Registrar receives written notification on or before the day of the seminar, addressed to GBC/ACM, PO Box 465, Lexington MA 02173. Refund requests received after the seminar date will be subject to a \$15 administrative fee. The \$10 membership fee will not be refunded.

### Any Questions?

See: <http://www.acm.org/chapters/gbc>

Call (617)862-1181

**Software Process Improvement Network (SPIN) October Meeting Announcement**

**Tuesday, October 15, 1996 at 6:30pm (refreshments), meeting at 7:00-8:30pm**

**REAL PROCESS IMPROVEMENT: BENEFIT & RISK IS PROCESS IMPROVEMENT REALLY WORTH IT?**

**WITH TIM LISTER, PRINCIPLE, ATLANTIC SYSTEMS GUILD**

**BOSTON AREA SOFTWARE PROCESS IMPROVEMENT NETWORK (SPIN) (ADMISSION FREE)**

**GTE, BUILDING #5, 77 A STREET, NEEDHAM, MA (WHEELCHAIR ACCESSIBLE)**

**MAUREEN HARRIS (617) 455-3393, HARRIS.MAUREEN@MAIL.NDHM.GTEGSC.COM**

**KEN OASIS (617) 563-4197, KEN.OASIS@FMR.COM**

**Overview**

Renowned author, teacher, and consultant Tim Lister will try to make the Author case that the quality of the software process is irrelevant and ill-defined without serious evaluation of the benefit of the product. We are fixated by process these days, and it is time that we really put our minds to defining projects to deliver maximum benefit for the time/cost available. Once we have confidence that we have done that, then the software process really matters. Tim will also talk about how truly valuable process cannot be tailored for any specific project without serious risk management. Good risk management will cause good practitioners to tailor the process the vast majority of the competent customize time. A standard project plan could never be the most effective way to run a project. Tim Lister is a Principal of the Atlantic Systems Guild working out of their NYC office. He is the author of several books, seminars, and video

series on assorted software project management issues. His book, Peopleware, assorted [italicize] co-authored with Tom DeMarco, was recently recognized by Fred Brooks, author of The Mythical Man-Month as "a major contribution during recent years" (in [italicize] 9/95 IEEE Software). Tim also serves as a panelist for the American Arbitration Association, arbitrating disputes concerning software and software services.

**Directions**

To get to GTE, Building #5: From Route 128 in Needham, take exit 19A onto Highland Avenue East. At first traffic light turn RIGHT onto Second Street. Go 1/4 mile (passing hillside Sheraton entrance on right) and turn RIGHT onto A Street. Go 1/5 mile and immediately after GTE HQ building on left (multi story glass facade), turn LEFT into Visitor Parking lot. Go around to the back of the building and visitor parking you will see the entrance. The security guard will direct you to the cafeteria.

The Greater Boston Chapter/ACM and The Association for Women in Computing

**will be sharing a booth with at  
The Internet Expo,  
at the  
Hynes Convention Center in Boston**

**October 15 - 17.**

**The chapter is looking for volunteers to help staff the booth; this includes talking about GBC and its programs, and passing out our literature.**

**To volunteer for booth duty, call Margaret Fogel at  
617-275-0622 (home) or 617-676-5290 (work).**

**For more information on the show, see their Web site at:  
<http://www.dciexpo.com/brochure/intbos/default.htm>**

## OCTOBER GB/SIGCHI MEETING ANNOUNCEMENT

## Space Craft: Perceptual Aids for Cognitive Activity Kevin Mullet, Macromedia, Inc., San Francisco, CA

MONDAY, OCTOBER 7TH, 1996  
REFRESHMENTS AT 6:30, MEETING AT 7:00

LOCATION: LOTUS, AUDITORIUM A, ONE ROGERS ST., CAMBRIDGE, MA (DIRECTIONS & PARKING INFO BELOW)

FREE AND OPEN TO THE PUBLIC. WHEELCHAIR ACCESSIBLE.

FOR MORE INFO: PLEASE CONTACT RON PERKINS AT RPERKINS@SHORE.NET (EMAIL PREFERRED) OR (508) 465-6083.

### Overview

The effective use of space and spatial metaphors is a critical success factor in graphical user interface (GUI) design. Sadly, this is also an area that has been largely neglected by toolkit, framework, and application developers. Effective use of space is prohibitively difficult in modern GUI's because the foundation layers of common software platforms provide little or no support for complex, expressive layouts (OSF/Motif with its Form and Frame widgets is one notable exception). Even worse, several form frame familiar UI conventions such as the use of "group boxes" linking labels to user interface (UI) controls or non-modular button widths that automatically match the length of their labels present severe problems for spatial parsing but have nevertheless become common by virtue of their availability in popular toolkits. A coherent visual organization enhances not only the aesthetics of an interface design, but its usability as well. Because spatial information is available at the earliest stages of perceptual processing, displays with spatial structure that is both obvious and relevant can be used to enhance higher-level cognitive functions. Making the important contextualizing or contextual relational information apparent "at a glance" helps users orient themselves, locate the information they need, and target or navigate efficiently. Spatial relationships, moreover, can make information displays easier to understand by revealing internal relationships more concretely and explicitly: the visual structure of a carefully crafted display will both reflect and reinforce the semantic structure of the underlying information. Print designers have been acutely aware of the importance of space craft since the Futurist, Constructivist, and De Stijl movements of the early 20th century. Their pioneering experiments with active layouts, asymmetric typography, and other spatial interactions showed how parts of a composition exert forces on one another that can be controlled by the designer and used to influence perception of the resulting display. These influential movements form the foundation of modern graphic design, but their influence on user interface design has thus far been minimal, at least in the area of software tools and standard GUI environments (content-oriented multimedia has been somewhat more successful). The focus of this talk is on layout issues in 2-dimensional spaces. I will briefly survey the growing popularity of 3d representations, but the emphasis will be on the application of effective spatial design in four key Visual Coding Visual Structure Visual Representation representation Visual

Systems. We will see how spatial articulation can be used, in each of these areas, to simplify learning, enhance memory, and streamline problem solving. Numerous examples will show how coherent visual structure makes a menu easier to scan, a dialog easier to interpret, or a window easier to operate. We will also see how careful space craft can reduce the need for explicit labeling and make the interface more approachable for beginning users without sacrificing operational efficiency for advanced users. Finally, we will describe one very simple technique - alignment of adjacent elements - that can be applied fairly mechanically to virtually any mechanically problem in GUI design. With just a little practice, this technique can be used to produce noticeable improvements in the visual structure and aesthetic quality of practically any product.

### Speaker

Kevin Mullet is the Product Designer for Macromedia's industry leading multimedia authoring and graphics production tools ( Director, Authorware, FreeHand, xRes, Extreme 3D, SoundEdit) for the Macintosh and Windows environments. He is also the lead designer for the Macromedia User Interface - a set of presentation and interaction design standards created to unify suites of diverse applications in a series of task-focused, tightly-integrated "digital design studios".

Mr. Mullet holds a BS and MA in Industrial Design - with specializations in industrial design, Visual Communication and Design Development, respectively - from The Ohio visual communication design development State University. He has conducted graduate-level research in experimental psychology and is the holder of several patents for his user interface design work. He has delivered lectures, papers, and tutorials on user interface design at the ACM/SIGCHI, IDSA, MacWorld, and XTechnical Conferences, and presented courses and invited talks at UC Berkeley, UCLA, Ohio State, as well as to numerous industry groups and professional societies.

### Directions

The Lotus building is on the corner of First St. and Rogers St. in Cambridge. (Note that there is another Lotus building on Cambridge Parkway next to the Sonesta hotel. Don't go to that one.) The meeting will be held in Auditorium A, on the first floor.