



#1 – #49

Programs from the 1975-2023  
Asilomar Microcomputer Workshop  
(2020 had a social night and a RAT talk night;  
2021: online program; 2022-23: hybrid program)

This file is available at [www.amw.org](http://www.amw.org)

*AMW: 30<sup>th</sup> Workshop Prologue – Ted Laliotis*

The Asilomar Microcomputer Workshop (AMW) has played a very important role during its 30 years of existence. Perhaps, that is why it continues to be well attended.

The workshop was founded in 1975 as an IEEE technical workshop sponsored by the Western Area Committee of the IEEE Computer Society.

The intentional lack of written proceedings and the exclusion of general press representatives was perhaps the most distinctive characteristic of AMW that made it so special and successful. This encouraged the scientists and engineers who were at the cutting edge of the technology, the movers and shakers that shaped Silicon Valley, the designers of the next generation microprocessors, to discuss and debate freely the various issues facing microprocessors. In fact, many features, or lack of, were born during the discussions and debates at AMW. We often referred to AMW and its attendees as the bowels of Silicon Valley, even though attendees came from all over the country, and the world.

Another characteristic that made AMW special was the “required” participation and contribution by all attendees. Every applicant to attend AMW had to convince the committee that he had something to contribute by speaking during one of the sessions or during the open mike session. In the event that someone slipped through and was there only to listen, that person was not invited back the following year.

The decades of the 70's and 80's were probably the defining decades for the amazing explosion of microcomputers. We feel fortunate to have been at the eye of the vortex that shaped the development of microprocessors and, by and large, fueled the Personal Computing revolution that became the driving engine of the mass market that propelled a brand new industry. An industry that enabled so many non-technical people to increase their productivity many-fold by being able to perform tasks available only to people with access to very powerful and expensive computers prior to that time. The 70's and 80's were a major step function in technology development and progress because of the development of the microprocessor. The 90's and, so far, the 00's have mostly provided us with incremental progress which can not even come close to the tsunami generated by the microprocessor during the 70's and 80's. We will probably have to wait at least another decade before we will see a technological phenomenon that will produce a revolution such as that of the microprocessor.

Recent AMW workshops, even though always fully subscribed, if not oversubscribed, have been, in my judgment, somewhat less technologically challenging and more socially oriented. Perhaps, that is because the breadth of technology and applications is so vast that it is difficult to identify and zero in to a single hot technology spot. AMW has always been a general, broad-topic conference. Perhaps, it is time to adopt thematic concentrations in future AMWs. On the other hand, who knows? Perhaps the general conference formula is the reason it has survived and still thrives 30 years later.

Ted Laliotis, AMW founder and first chairperson  
[www.laliotis.org](http://www.laliotis.org)

PS. I always enjoyed the titles of honorary committee member and/or Chairman Emeritus of AMW that I have occasionally been given. I think that similar titles should be bestowed to all veteran AMW committee members in recognition of their services along with invitations to participate at the various organizing meetings and events. Inclusion, not exclusion, is what promotes success.

## *A Short History of Asilomar – Fred Coury*

It all started with a phone call from an IEEE member in Los Angeles. He said that microcomputers were starting to catch on, and that the IEEE should have a workshop on them. He asked me if I would set one up. Being new to the Consulting business, and not knowing the first thing about setting up a conference, but not yet learning to say no, I said "sure, why not." After he hung up, I called my friend Fred Clegg at Santa Clara University, hoping that he would know something about setting up conferences, and also have a place to hold one.

We were saved by a call from Ted Laliotis, who, along with Don Senzig, had independently decided to start an IEEE conference on micros and thought we should pool resources and do just one.

The first Asilomar Committee meeting was held upstairs at the Menu Tree. Another Fred (Terman) was there because he lived in Monterey, and knew how to set up Conferences at Asilomar. He subsequently took responsibility for making arrangements for the conference, and, after thirty years, certainly deserves our appreciation. We literally could not have done it without him.

We blocked out time for five sessions, and came up with topics for four of them: Hardware, Software, Technology, and Applications. After wracking our brains for a topic for the fifth (Thursday evening) session, I suggested that we leave it open for people sign up to talk about whatever they wanted to at the conference itself. I volunteered to chair the session, and did so for the next twenty years (talk about working smarter, not harder!).

The talks were scheduled for ten minutes each, in the order in which they were signed up for. The session was an instant success, leading some to later refer to it as a "Rich Asilomar Tradition." Leave it to Jim Warren to shorten it to "The RAT Session."

The rest, as they say, is history.

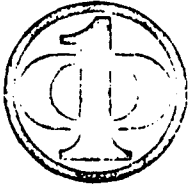
Just to put some things in perspective:

- The 8080 (2 *microsecond* cycles (500 *KHz*), 64 *kilobyte* address space) was the latest microprocessor.
- Four *kilobyte*, 100 nanosecond dynamic RAMs, were the latest in solid state memory.
- The ASR33 Teletype (10 characters per second, paper tape reader and punch) was the most widely used terminal.
- There were no personal computers, just the Altair schematics, available *free* from Popular Electronics, and the newly available "Apple" kits.
- There was no Internet, just the ARPAnet. Telephone communication was over an IBM 300 *baud* modem.

*A Short History of Asilomar – Fred Coury*

- Most microcomputer people were originally electrical engineers, physicists, or mathematicians who got their hands on an 8080 manual, got hooked, and took it from there. A significant percentage of the world's microcomputer "experts" could be found at the Home Brew Computer Club meetings.

Although the Conference severed its relationship with IEEE long ago, and has morphed into the "Asilomar Workshop on Neat Stuff", it has never wavered from its original principles: An invitational meeting of the "movers and shakers" of the industry on the cutting edge of technology. Tightly scheduled, highly interactive formal and informal meetings, no marketing pitches, no non-participating observers, no formal publications, no going to bed until at least one A.M....



IEEE COMPUTER SOCIETY

CALL FOR PARTICIPATION  
IN  
ADVANCED ARCHITECTURE  
AND  
APPLICATIONS OF MICROCOMPUTERS

*A Workshop*

April 30 - May 2, 1975  
Asilomar, California

*Sponsored by the Technical Committee on Computer Architecture and the  
Western Area Committee*

Large-scale integration has made the computer-on-a-chip a practical system component. As a result microprocessor architecture, hardware, and software is currently the most dynamic area in the computer field. The objectives of this workshop is to bring together the users and the manufacturers of microprocessors in an attempt to understand the unique characteristics of microprocessors and explore ways of enhancing the range of microprocessor applications. The focus will be on the unique aspects of microcomputers as system components.

The accompanying description of four scheduled sessions lists representative topics. Other topics relevant to the theme of the workshop will be welcomed.

The first session, "Limitations of Current Microprocessors from the System Viewpoint," will establish a reference point for further discussions. The session will attempt to define exactly where we are with respect to the actual capabilities of existing products. It will include descriptions of systems which are limited in one way or another by the fact that they are microcomputer-based, as well as applications which are potential candidates for a microcomputer, but could not be implemented as such using currently available products.

Session two, "Technology Constraints, Present and Future," will consider the limitations imposed by technology. Current limits on speed, complexity and cost will be discussed in terms of limitations on technology-related parameters such as processing, packaging, masking, and testing. Also, predictions will be made as to how these limitations can be expected to change in the future.



INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Session three, entitled "Software Considerations in Future Designs" will address itself to the software considerations in device specification and design--i.e., the software aspects which are built into rather than onto a microcomputer system.

The fourth session, "Microcomputers in the Future: Unique Applications" is intended to provide directions for further developments. By indicating potential applications which are unique to microcomputers --i.e., things which could not be done without them--and then examining the characteristics of the devices which are implied by the applications, it is hoped to shed some light on the critical parameters of development.

A fifth session will be set aside as an ad hoc session whose topic(s) will be determined by the interest of the participants.

To encourage free discussion, no proceedings will be published and no recordings or photographs will be permitted.

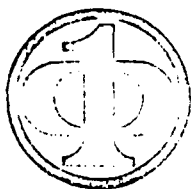
Should you be interested in participating in the workshop, please return the questionnaire immediately. Invitations will be mailed by March 30, 1975 to those selected by the Program Committee. Whether or not you plan to participate, we would appreciate your calling the announcement to the attention of a qualified colleague who may have been omitted from the mailing.

The fee for the Workshop (including room for two nights and meals) will be \$70 for IEEE members, \$85 for non-members. DO NOT REMIT the fee with your questionnaire-application.

Address your reply to:

Mr. Don Senzig  
Workshop Registration Chairman  
Hewlett-Packard Laboratories  
1501 Page Mill Road  
Palo Alto, CA 94304

Application must be returned  
IMMEDIATELY



IEEE COMPUTER SOCIETY

ASILOMAR WORKSHOP  
on  
ADVANCED ARCHITECTURE AND APPLICATIONS OF MICROCOMPUTERS  
April 30 - May 2, 1975  
QUESTIONNAIRE

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ TELEPHONE \_\_\_\_\_

Present activities related to the subject of the workshop:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

My primary interest is: \_\_\_\_\_

I am interested in participating with my views on the following:

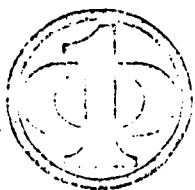
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I am interested in presenting the following new concepts or evaluations:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attached is an abstract of the talk that I wish to present \_\_\_\_\_

Return to:  
Mr. Don Senzig  
Workshop Registration Chairman  
Hewlett-Packard Laboratories  
1501 Page Mill Road  
Palo Alto, CA 94304



IEEE COMPUTER SOCIETY

ASILOMAR WORKSHOP

on

ADVANCED ARCHITECTURE AND APPLICATIONS OF MICROCOMPUTERS

Session I.                    Limitations of current microprocessors from the system viewpoint.

Chairman: Ken Rothmuller, Hewlett-Packard

Session II.                    Technology constraints, present and future.

Chairman: Peter Verhofstadt, Fairchild Semiconductor

Session III.                    Software considerations in future designs.

Chairman: Terry Opdendyk, Intel

Session IV.                    Microcomputers in the future: unique applications.

Chairman: Bob Winder, RCA

PROGRAM COMMITTEE

General Chairman

Ted Laliotis, Fairchild Systems Technology

Program Chairman

Fred Coury, Coury Associates

Program Co-Chairman

Fred Clegg, University of Santa Clara

Registration Chairman

Don Senzig, Hewlett-Packard

Local Arrangements

Fred Terman, Stanford University





ASILOMAR WORKSHOP  
ON  
ADVANCED ARCHITECTURE  
AND  
APPLICATIONS OF MICROCOMPUTERS

April 30 - May 2, 1975

PROGRAM COMMITTEE

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Fred Clegg, University of Santa Clara

Registration Chairman  
Don Senzig, Hewlett-Packard

Local Arrangements  
Fred Terman, Stanford University

- Session I  
Wed. p.m.      Strengths and limitations of current microprocessors from the system viewpoint  
Chairman: Ken Rothmuller, Hewlett-Packard
1. Framework for discussion, Ken Rothmuller, Hewlett-Packard
  2. Smart instrumentation, Bill Smith, Fairchild Systems Technology
  3. Dedicated digital controllers, Matt Biewer, Pro-Log
  4. Entertainment systems, Steve Mayer, Atari
  5. Peripheral controllers, Jim Toreson, Microcomputer Systems Corp.
- Session II  
Wed. eve.      Multiple microprocessors  
Chairman: John Wakerly, Stanford University
1. Microprocessor-based distributed processing systems, Dan Zatyico, Varian Data Machines
  2. Interrupts, operating systems, and multiprocessing, Justin Rattner, Intel
  3. Organization of a configurable machine using microprocessors, Keki Irani, University of Michigan
  4. Characteristics of building blocks for general-purpose multimicroprocessor systems, Barry Borgerson, Sperry Research

Session III Technology constraints, present and future

Thurs. a.m.

Chairman: Peter Verhofstadt, Fairchild Semiconductor

1. User-oriented approaches to microprocessor testing, J. Salvador, R. Regalado, Teradyne
2. Technology limitations of SOS, A. Williman, Rockwell International
3. Processor oriented I<sup>2</sup>L applications in the over-1000-gates area, W. Ray, Texas Instruments
4. Serrated functions for digital systems using high-performance technologies, K. Rallapalli, Fairchild Semiconductor

Session IV Software considerations of microprocessors

Thurs. p.m.

Chairman: Terry Opdendyk, Intel

1. A microprocessor programming language, Ian Davidson, Ian Davidson, University of Waterloo
2. A user's view of microprocessor software and architectural needs, Jack Grimes, Tektronix
3. High order languages and AMI software support, Larry Krummel, American Microsystems, Inc.
4. Software reliability and validation for microprocessors, Edward Miller, Jr., General Research Corp.

Session V Open for ad hoc discussions

Thurs. eve.

Chairman: Fred Coury, Fred Coury Associates

Session VI Microcomputers in the future: unique applications

Fri. a.m.

Chairman: Bob Winder, RCA

1. Microprocessors in entertainment and education, Steve Mayer, Atari
2. Microprocessors in entertainment and education, Gaymond Schultz, Ramtek
3. Automotive applications of microprocessors, Timothy Schlax, General Motors
4. Automotive applications of microprocessors, Carrol Howanski, Rockwell Microelectronics Development Division

MAY 14 1975

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Gerald McLann  
844 Addison Street  
Palo Alto, Ca. 94301

John H. Hemphill  
8324 Philadelphia Dr.  
Fairborn, Ohio 45324

Bert Forbes  
Hewlett-Packard Co.  
Cupertino Division  
11000 Wolfe Rd.  
Cupertino, Ca. 95014

Jack E. Shemer  
Advanced Development Laboratory  
Xerox Corp.  
701 S. Aviation Blvd.  
El Segundo, Ca. 90245

David Cronshaw  
Advanced Development Laboratory  
Xerox Corp.  
701 S. Aviation Blvd.  
El Segundo, Ca. 90245

Hans Benke  
Electronic Modules Corp.  
P.O. Box 141  
Timonium, Md. 21093

Al Weissberger  
National Semiconductor Corp.  
2900 Semiconductor Dr.  
Santa Clara, Ca. 95051

James S. Toreson  
Microcomputer Systems Corp.  
1007 Craig Dr.  
San Jose, Ca. 95129

Norwood Sisson  
7431 East Portland Street  
Scottsdale, Arizona 85257

Dennis Allison  
169 Spruce Avenue  
Menlo Park, Ca. 94025

Justin Rattner  
Intel Corp.  
3065 Bowers Avenue  
Santa Clara, Ca. 95051

Robert O. Winder  
24 Deer Path  
Princeton, N.J. 08540

P.O. Peterson, Jr.  
3210 Investment Blvd.  
Haywood, Ca. 94545

Martin Graham  
3060 Buena Vista Way  
Berkeley, Ca. 94708

John V. Landau  
5 Center Drive  
Mountain Lakes, N.J. 07046

Dr. John M. Salzer  
Darling & Alsbrook  
1801 Avenue of the Stars  
Ste. 1101  
Los Angeles, Ca. 90067

Vincenzo Torresi  
21081 White Fir Court  
Cupertino, Ca. 95014

Dr. Donald F. Gorman  
Signetics  
811 East Arques Ave.  
Sunnyvale, Ca. 94036

Bryce Jeppsen  
Hewlett-Packard Co. - Santa Clara Div.  
5301 Stevens Creek Blvd.  
Santa Clara, Ca. 95050

Dave Cochran  
Hewlett-Packard Co.  
3500 Deer Creek Rd.  
Palo Alto, Ca. 94304

Dr. Alvin M. Despain  
1700 East 1400 North  
Logan, Utah 84321

A. O. Williman  
Rockwell International  
Electronics Group  
3370 Miraloma Avenue  
Anaheim, Ca. 92803

Mr. William H. Roberts  
Vice President  
Research & Development  
Western Digital Corp.  
19242 Red Hill Ave.  
Box 2180  
Newport Beach, Ca. 92663

T. Marshall  
Electronic Development  
NCR Corporation  
Retail Systems Division  
P.O. Box 728  
Cambridge, Ohio 43725

Rooney Regalado  
Teradyne, Inc.  
Digital Systems Division  
20130 Plummer St.  
Chatsworth, Ca. 91311

Steve Mayer  
Cyan Engineering Co.  
P.O. Box 1875  
Grass Valley, Ca. 95945

Imsong Lee  
University of California  
Electrical Engineering & Computer Sciences  
Berkeley, Ca. 94720

Dr. Barry R. Borgerson  
Sperry Research Center  
100 North Rd.  
Sudbury, Ma. 01776

Prof. Bernard J. Carey  
School of Engineering  
University of Connecticut  
Storrs, Conn. 06268

R. D. Elliott  
Bldg. 5/2700  
TRW Systems Group  
One Space Park  
Redondo Beach, Ca. 90278

A. J. Nichols  
AMI  
3800 Homestead Rd.  
Santa Clara, Ca. 95051

Larry Krummel  
AMI  
3800 Homestead Rd.  
Santa Clara, Ca. 95051

Carter L. Horney  
Microelectronic Device Division  
Rockwell International Corp.  
3310 Miraloma Avenue  
Anaheim, Ca. 92803

Klaus Funke  
Digital Telephone Systems  
P.O. Box 1188  
Novato, Ca. 94947

W. R. Smith  
Fairchild Systems Technology  
P.O. Box 880P  
Mt. View, Ca. 94040

Prof. Keki B. Irani  
University of Michigan  
Systems Engineering Laboratory  
Rm. 2510 East Engineering Bldg.  
Ann Arbor, Mich. 48104

Terry Opdendyk  
Intel Corp.  
3065 Bowers Avenue  
Santa Clara, Ca. 95051

Dr. Jack D. Grimes  
18050 S.W. Pleasant Court  
Aloha, Oregon 97006

Matt Biewer  
Pro-Log Corp.  
852 Airport Rd.  
Monterey, Ca. 93940

Sterling Hou  
Intel Corp.  
3065 Bowers Ave.  
Santa Clara, Ca. 95051

Mike Yen  
Intel Corp.  
3065 Bowers Avenue  
Santa Clara, Ca. 95051

John F. Day, III  
Director, Market Development  
AMI  
3800 Homestead Rd.  
Santa Clara, Ca. 95051

Don Senzig  
Hewlett-Packard Co.  
HP Laboratories Division  
1501 Page Mill Rd.  
Palo Alto, Calif. 94304

Sig Porter  
Logsin Co.  
P.O. Box 67009  
Los Angeles, Ca. 90067

Richard F. Crall  
Cal. State University  
6000 Jay Street  
Sacramento, Ca. 95819

Raymond W. Schultz  
Rameck Corp.  
292 Commercial St.  
Sunnyvale, Ca. 94086

Peter Verhofstadt  
Fairchild Semiconductor  
464 Ellis Street  
Mt. View, Calif. 94040

S. T. Huey  
Digital Telephone Systems, Inc.  
1 Commerce Blvd.  
Novato, Ca. 94947

William G. Lane  
Calif. State Univ., Chico  
Chico, Ca. 95926

Dr. Perez-Mendez  
University of California  
Lawrence Berkeley Lab.  
Berkeley, Ca. 94720

Dr. Pierre Leconte  
University of California  
Lawrence Berkeley Laboratory  
Berkeley, Ca. 94720

Ed McCluskey  
168 Waverley, Apt. 6  
Palo Alto, Ca. 94301

Krishna Rallapalli  
Fairchild Semiconductor  
464 Ellis St.  
Mt. View, Ca. 94040

John F. Wakerly  
Digital Systems Lab.  
Stanford, Ca. 94305

J. C. Tu  
OSI  
21031 Ventura Blvd.  
Woodland Hills, Ca. 91364

Norris Cohen  
N.C.R.  
Data Processing Division  
16550 West Bernard Drive  
San Diego, Ca. 92127

L. C. Hobbs  
Hobbs Associates Inc.  
Box 686  
Corona Del Mar, Ca. 92625

William B. Ray  
03-562 M/S 935  
Texas Instruments, Inc.  
P.O. Box 5012  
Dallas, Texas 75222

Ted Laliotis  
61 Doud Drive  
Los Altos, Ca. 94022

Ian Davidson  
Elect. Eng.  
University of Waterloo  
Waterloo, Ontario  
Canada  
N2L 3G1

Bob Kadarauh  
Hewlett-Packard  
Data Systems Division  
11000 Wolfe Rd.  
Cupertino, Ca.

J. McAllister  
Burroughs Corp.  
P.O. Box 235  
Downingtown, Pa. 19335

Jean Claude Cornet  
Intel Corp.  
3065 Bowers Avenue  
Santa Clara, Ca. 95051

Helmut Painke  
IBM Deutschland GmbH  
D7000 Stuttgart 80  
P.O. Box 800000

Arvind  
Dept. of Information & Computer Science  
University of California  
Irvine, Ca. 92664

Larry Marsh  
General Motors Corp.  
General Motors Technical Center  
Warren, Michigan 48090

James Russell  
Essex International  
564 Alpha Drive  
Pittsburgh, Pa.

I. J. Kim  
MS 4483  
Sperry Univac Computer Systems  
2276 Highcrest Dr.  
Roseville, Minn. 55113

Anthony J. Kolk, Jr.  
CDC, Bldg. 1  
Mail Stop 35  
2815 W. El Segundo Blvd.  
Hawthorne, Ca. 90250

Prof. Fred Clegg  
University of Santa Clara  
Santa Clara, Ca. 95053

Dr. Samer Attasi  
Institut de recherche d' informatique  
et d' Automatique  
Rocquencourt 78150  
France

Kornel Spiro  
Amdahl Corp.  
1250 East Arques Avenue  
Sunnyvale, Ca. 94086

Fred F. Coury  
1278 Mandarin Drive  
Sunnyvale, Ca. 94087

Gary Killhall  
781 Bayview  
Pacific Grove, Ca. 93950



SECOND ANNUAL WORKSHOP ON MICROPROCESSORS

April 28-30 1976  
Asilomar, California

IEEE COMPUTER SOCIETY

"UNIQUE ASPECTS OF MICROPROCESSOR BASED SYSTEMS"

Workshop Program

SESSION I - Wednesday 2:00 PM

Topic: DEVELOPMENT SUPPORT

Moderator: Many Lemas, Microcomputer Associates

Speakers: Matt Biewer, Pro Log Corporation  
Shirbey Gangware, Gangware Associates  
Larry Krummel, Ramtek Corporation  
Hap Walker, Intel Corporation

Microcomputer development support encompasses a variety of required equipment, software and services. These requirements will be identified. The main theme will be "The Adequacy of Development Support" and, in particular, "Development Systems". Topics to be addressed include: Development Systems Today; Are Sophisticated Development Systems Really Needed?; What Development Systems Should Be; The Pros and Cons of In-Circuit-Emulation; Are Chip Manufacturers Doing a Good Job?; Can Independent Manufacturers Succeed in The Development Systems Business?

SESSION II - Wednesday 7:30 PM

Topic: PRODUCTION AND FIELD SUPPORT OF MICRO-BASED SYSTEMS

Moderator: Jack Grimes, Tektronix

Speakers: Jack Gilmore  
Gary Gordon, Hewlett Packard  
Sterling Hou, Intel Corporation  
Chuck House, Hewlett Packard

This session will examine in depth the unique problems posed by microprocessor based systems in the production and field support environment. This includes: putting the systems together and testing them in production, plus unique needs in the field, such as special techniques for finding bugs and fixing them.



SESSION III - Thursday 8:30 AM

Topic: UNIQUE ASPECTS OF MICROCOMPUTER SOFTWARE

Moderator: Fred Clegg, Hewlett Packard

Speakers: Dennis Allison  
Matt Biewer, Pro Log Corporation  
Gordon French, Processor Technology

Significant differences exist in the software required for micros versus minis. One unique aspect is that a significant percentage of microcomputer programs are being written by persons with no formal training in software techniques. This session will address all the implications of this problem as well as other unique aspects of microcomputer systems software.

SESSION IV - Thursday 1:30 PM

Topic: NEW SYSTEM DESIGN TECHNIQUES AND ARCHITECTURES

Moderator: A. J. Nichols, Intel Corporation

Speakers: Robert Giuli, Giuli Microprocessing Inc.  
Jack Grimes, Tektronix  
Larry Joba, Coherent Radiation  
Allan Pierce, GTE Laboratories, Inc.

This session will examine the unique aspects of microprocessor based systems design. Emphasis will be placed on new system design philosophies and techniques which are emerging as a result of applying microprocessors to real world problems. There will also be suggestions as to improved systems architectures based on experience.

SESSION V - Thursday 7:30 PM

Topic: OPEN SESSION (Ad Hoc)

Moderator: Fred Coury, Coury Associates

SESSION VI - Friday 8:30 AM

Topic: MICROPERIPHERALS

Moderator: James Torensen, Microcomputer Systems

Speakers: Ed Averett, Intel Corporation  
David Callan, ICOM Inc.  
Carl Helmers, Byte Publications  
J. E. Juliussen, Texas Instruments  
Imsong Lee, Digital Equipment Corporation

This session will cover the entire spectrum of I/O for microcomputer systems from programmable I/O chips to mass storage devices including trends and standards for the mass market. Discussion will focus on the unique requirements and characteristics on peripherals optimized for microcomputer systems.

THIRD ANNUAL WORKSHOP ON MICROPROCESSORS

April 20-22, 1977  
Asilomar, California

"MICRO PROCESSORS IN PERSPECTIVE"

WORKSHOP PROGRAM

SESSION I Wednesday 2:00 PM Topic: EDUCATION

Moderator: Irene Watson, Independent Consultant

Objective: To discuss the problems and possibilities of 1) educating people about micros, and 2) using micros to aid education. The use of micros is accelerating rapidly and hence so is the need for increased knowledge on the part of the managers, the salesmen, the technicians and maintenance people, the engineers, the programmers, the consumers, the consultants, and the public. This panel will be composed of people with differing perspectives on this issue. Come prepared to discuss your and/or your institution's educational needs and problems in regard to micros.

SESSION II Wednesday 7:30 PM Topic: ARCHITECTURE AND TECHNOLOGY

Moderator: Justin Rattner, Intel Corporation

LSI Package Technology - The LSI package proposal of the JEDEC JC-11.3.1 Task Group on LSI Package Outlines.

Mega-Micro Architecture - Large and very large multiple microprocessor arrays for mathematical problem solving.

Personal Computer Architecture - Requirements for a personal computer, both hardware and software. Academic, industrial and commercial interests will present their own views of tomorrow's personal computer.

SESSION III Thursday 8:30 AM Topic: SOCIETY

Moderator: Dennis Allison, Independent Consultant

Will the microcomputer have the same kind of pervading influence on day-to-day life that other high technology products (e.g. the wheel, transistor, birth control pills, etc.) have had? Are hobby computer fanatics prophets in their own time or simply an aberrant splinter of modern society? Will the computer become a common home appliance as television, cameras, and stereos have? Does cheap computing make computing any better? Is the future of the world best served by making all inhabitants programmers; what are the alternatives? Expect a free-form discussion on these and other important topics.

SESSION IV Thursday 1:30 PM Topic: SOFTWARE & DESIGN TECHNIQUES

Moderator: Van Whittis, Bell Northern Research

What distinguishes microcomputer software and design techniques from the techniques used on mainframes and minis...very little. As micro applications grow in size, the development problems approach the magnitude of those faced by the micro's antecedents. Multiprocessor systems design and large program development aids are topics central to this session.

SESSION V Thursday 7:30 PM Topic: OPEN SESSION

Moderator: Fred Coury

SESSION VI Friday 8:30 AM Topic: APPLICATIONS

Moderator: Dennis Paull, Paull Associates

Where are micros being used now? What new application areas will be opened up during the next five years? Are feasible and viable applications waiting for something really different to be invented? What new uses (if any) will develop out of the current proliferation of semi-novel chip sets from the micro manufacturers? And, if none, why are they doing it? These and other questions will be discussed by the Workshop with help from a panel of experts in automotive, consumer, hobbist, business, communications, control, instrumentation, multi-micro and other fields.



# IEEE COMPUTER SOCIETY

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## FOURTH ANNUAL WORKSHOP ON MICROPROCESSORS

12-14 April 1978  
Asilomar, California

### "TECHNOLOGICAL TRENDS AND APPLICATIONS"

#### WORKSHOP PROGRAM

- SESSION I      Wednesday, 2:00 P.M.      APPLICATIONS  
Session Chairman: John Michael French, Synertek
1. Jack Landau, Singer Company; "Techniques for Table-Driven Processors in Industrial Sewing Machines"
  2. Dennis Paull, Paull Associates; "Microprocessors in Medical Applications"
  3. James Russell, Essex International; "Custom LSI for the Automative and Applicance Industries"
  4. John Michael French, Synertek; "The F-8 in Consumer and Industrial Applications"
- SESSION II      Wednesday, 7:30 P.M.      DESIGN AIDS  
Session Chairman: Mark Flomenhoft, Intel Corporation
1. Will Sherwood, Digital Equipment Corporation; "Experiences Combining Register-Transfer-Level and Logic-Level Simulation"
  2. Jim Howard, Intel Corporation; "The Transparent Bus Concept"
  3. Paul Drougowski, Ford Aerospace and Communications Corporation; "A Systems Methodology for the Design of Multiprocessor Systems"
- SESSION III      Thrusday, 8:30 A.M.      NEW CHIP ARCHITECTURES  
Session Chairman: Bernard Peuto, Zilog Corporation
1. Bob Burlingame, Motorola, Incorporated; "The Motorola 6801"
  2. Bernard Peuto, Zilog Corporation; "The Zilog Z-8"
  3. John F. Wakerly, BNR; "Single-Chip Microcomputers"
  4. Bruce Ravenel, Intel Corporation; "The Intel 8086"
  5. Bernard Peuto, Zilog Corporation; "The Zilog Z-8000"
  6. Leonard Shustek, Carnegie-Mellon University; "16-bit Micro-processor Architectures"





- SESSION IV      Thursday, 1:30 P.M.      NEW SYSTEMS ARCHITECTURES
- Session Chairman: John F. Wakerly, BNR
1. Ralph Schultz, Sperry Research; "Testing Philosophies and Techniques for Microprocessors"
  2. Bert Forbes, Ziotech, Incorporated; "Standard I/O Structures for Microprocessors"
  3. Dave Farber, University of Delaware; "A Distributed-Processing Office Automation System"
  4. Ashok Dhawan, Computer Transmissions, Incorporated; "Microprocessors and Data Communication"
  5. Archie Bowen, Ray Buhr, and Mahnum Sultan, Carleton University; "A Multi-Microprocessor Intelligent Terminals Project"

- SESSION V      Thursday, 7:30 P.M.      OPEN DISCUSSION
- Moderator: Fred Coury, Fred Coury Associates

- SESSION VI      Friday, 8:30 A.M.      SOFTWARE ISSUES
- Session Chairman: Charlie Bass, Zilog Corporation
1. Ken Burgett, Dharma Systems; "Software Requirements from an Independent versus an Industry Orientation"
  2. Ken Bowles, University of California at San Diego; "A PASCAL-based, Machine-Independent Operating System"
  3. Bob McClure, Independent Consultant, "What Microprocessor Users Really Want"
  4. Gary Kildall, Digital Research, "Relocatable Object Formats and Other Standardization Issues"
  5. Dennis Allison, Independent Consultant; (to be announced)



May 23-25 1979  
Asilomar, California

IEEE COMPUTER SOCIETY

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WORKSHOP PROGRAM

*SESSION I - Wednesday 2:00 PM - May 23*  
*Interdevice Communications*

Panel A

TOPIC: STANDARDS

*Moderator: Prof. Alvin M. Despain - University of California, Berkeley*

- Speakers:*
- 1. Robert G. Stewart, Stewart Research  
"IEEE Microcomputer Standards"*
  - 2. Cash Olson, Signetics  
"Future Bus"*
  - 3. Dennis Allison, Stanford University  
"Software Issues and Standards"*

Panel B

TOPIC: MULTIPLE MICROCOMPUTERS

*Moderator: Prof. Alvin M. Despain - University of California, Berkeley*

- Speakers:*
- 1. David P. Patterson, University of California, Berkeley  
"Issues in Multiple Microcomputer Systems"*
  - 2. Peter G. Jessel, Digital Equipment Corporation  
"A Multiple - LSI-11 System"*
  - 3. Lucio Lanza, Intel Corporation  
"Issues in Multimicrocomputers"*
  - 4. John Banning, Zilog  
"Tightly Coupled Microprocessors"*

*SESSION II - Wednesday 7:30 PM*  
*Technology Constraints and Implementation*

*Moderator: Prof. Carlo Sequin, University of California, Berkeley*

*Part A: Nick Treddennick, Motorola  
"Implementation of the MC 68000"*

*Part B: Designing for Testability (Panel Discussion)*

- 1. Keigi Muranaga, Fairchild*
- 2. Ronald G. Walther, IBM*
- 3. Andrew Stefanski, Hewlett-Packard*



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- Part C:
1. *Dave Hodges, University of California, Berkeley*  
*"The Future of Analog Circuits in VLSI"*
  2. *Ted Hoff, Intel*  
*"Analog and Digital Circuitry on One Chip in a Real Product"*

- Part D: *The Impact of Lower Power Supply, Voltages (Panel Discussion)*
1. *Hal Muller, Burroughs Corporation*
  2. *Peter Stoll, Intel*
  3. *James Koo, National Semiconductor*

### SESSION III - Thursday 8:30 - May 24

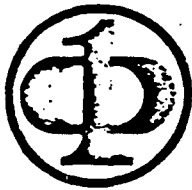
Moderator: *Joe Kennedy, Zilog*

1. *Steve Ward, Massachusetts Institute of Technology*  
*"An Approach to Personal Computing"*
2. *John Ahlstrom, Bell Northern Research*  
*"LSI Minicomputers"*
3. *Gregg Chesson, Bell Labs, Murray Hill, N.J.*  
*"Data Kit: The Software Architecture"*
4. *Bruce Ravenel, Language Resources*  
*"Implications of the Economics of Software on System Design"*

### SESSION IV - Thursday 1:30 PM Support Devices

Moderator: *J. Michael French*  
*Computer Avionics Corporation*

1. *Bruce Gladstone, Futuredata Corporation*  
*"Development System Architectures to Support Multiple Microprocessor Systems"*
2. *Paul Heckel, Interactive System Consultants*  
*"Prototyping Techniques Used in Developing a Language Translator"*
3. *Bob Gamble, Rockwell Corporation*  
*"Extensions of the System 65 Development System"*
4. *Wilhelm Kahan, University of California, Berkeley*  
*"Floating Point Standards"*



## IEEE COMPUTER SOCIETY

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*SESSION V - Thursday 7:30  
Open Discussion*

*Moderator: Fred F. Coury, Fred Coury Associates*

*SESSION VI - Friday 8:30 AM - May 25  
New Directions and Architectures*

*Moderator: Prof. Forest Baskett, Stanford University*

- 1. Guy Steele, Massachusetts, Institute of Technology  
"The LISP Machine Chip"*
- 2. Forest Baskett, Stanford University  
"PASCAL and Virtual Memory on a Z-8000 Based Design Station"*
- 3. Marc Overgaard, University of California, San Diego  
"PASCAL P-machines"*

Wednesday - April 23rd:SESSION I. "Special-Purpose Building Blocks"

2:00 p.m. Chairman: Carlo Séquin, U.C. Berkeley

1. Carver Mead, Cal Tech, "A VLSI Design Methodology for the 1980s".
2. Jim Clark, Stanford University, "A Special-Purpose Arithmetic Engine for Graphics Applications".
3. Glenn Krasner, Xerox PARC, "The BITBLT".
4. Dick Lyon, Xerox PARC, "Special-Purpose Chips for Speech Processing Applications".

## COFFEE BREAK

5. John Palmer, Intel, "The Intel 8087 Floating-Point Processor".
6. Nobel Powell, John Irwin, General Electric, "Functional Advances in FFT Processors".

SESSION II. "Applications"

7:30 p.m. Chairman: Stan Mazor, Intel

1. Dennis Paul, Consultant, "Medical Applications".
2. John Wharton, Intel, "Microprocessor-Controlled Carburetion".
3. Richard W. Kovener, National Semiconductor, "A Microcomputer-Controlled Digitally-Tuned Radio".
4. Richard W. Kovener, National Semiconductor, "A Power Seat With Memory".

SESSION III. "Technology"

8:30 a.m. Chairman: Dick Anderson, Anderson-Bogert

1. Jim Knutt, Stanford University, "Integrated Sensors".
2. Bob Norman, Consultant, "The Application of VLSI Technology".
3. Jim Tobias, Honeywell, "Computer-Aided Design for LSI".
4. Tom Gunter, Motorola, "Designing Microprocessors Today".
5. Dave Patterson, U.C. Berkeley, "Design Considerations for Single-Chip Computers of the Future".

Thursday - April 24th:SESSION IV. "Architectures"

1:30 p.m. Chairman: Richard Zimmerman, Apple Computer Company

1. Hal Kop, Intel, "I/O Processing Using the 8089".
2. Skip Stritter, Nestar, "Intermediate Languages and Their Applicability to Microprocessors".
3. Matt Townsend, Intel, "The Intel 2920".
4. John Allen, The LISP Company, "The Applicability of Current Architectures to Large Problems".

SESSION V. "Open Discussion"

7:30 p.m. Chairman: Fred Coury, Fred Coury Associates

Friday - April 25th:SESSION VI. "Software"

8:30 a.m. Chairman: Dennis Allison, Consultant

1. Gary Kildall, Digital Research, "A PL/I Compiler for the 8080".
2. Bruce Raynel, Language Resources, "Loading and Binding Considerations for PASCAL".
3. La Farr Stewart, Computer Avionics, "Le-FORTH".
4. Marc Kaufmann, Kaufmann Research, "Execute - Only Memories".
5. Dennis Allison, Consultant, "A Toy Silicon Compiler".

SEVENTH ANNUAL ASILOMAR MICROCOMPUTER WORKSHOP

22 - 24 April 1981

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SESSION I. Technology (Wednesday 1:30 - 5:00 PM)

Chairman: Peter Verhofstadt, Fairchild Semiconductor

1. Robert Broderson, U C Berkeley, Tat Choi, U C Berkeley, "An Inverted Bulk CMOS Process".
2. Carlo Sequin, U C Berkeley, "Fabrication-Independent Layout".
3. Louis Scheffer, Hewlett-Packard Company, "A Constrained Methodology for Hierarchical Design".
4. William VanCleemput, Stanford University, "Developments in Hierarchical Computer Aided Design".

SESSION II. Architectures (Wednesday 7:15 - 10:00 PM)

Chairman: Lloyd Dickman, DEC, U C Berkeley

1. Les Kohn, National Semiconductor, "The NS 16000".
2. Mark Harrison and Terry Maletsky, Bell Laboratories, "The Bell Labs MAC-32".
3. Konrad Lai, Intel Corporation, "The iAPX 432".
4. Dave Patterson, U C Berkeley, "The RISC".

SESSION III. Software (Thursday 8:30 - 11:45 AM)

Chairman: Bruce Ravenel, Language Resources Corp.

1. Bob Greenberg, Microsoft, Inc., "ZENIX: UNIX for 16-bit Microcomputers".
2. Bob Hoffman, First Systems Corporation, "What's Missing From Software Development Tools?".
3. Craig Maudlin, Renaissance Systems, "ADA: Relevant to Microcomputers?".
4. Larry Tessler, Apple Computer Company, "SMALLTALK: A Study in Object-Oriented Languages".
5. John Allen, The LISP Company, "LISP and Its Applications".

SESSION IV. Applications (Thursday 1:30 - 5:00 PM)

Chairman: Stan Mazor, Intel Corporation

1. Jack Irwin, National Semiconductor, "Low End Microprocessor Applications".
2. Tom Cook, American Sterilizer Company, "Microprocessors in Medical Sterilizers".
3. Sandra Wharton, Intel Corporation, "The Intel Signal Processing Application System".
4. Rob Hoffman, First Systems Corp., "50,000 Lines of Code Later ..."
5. Bill Smith, Caere Corp., "Optical Character Recognition".

SESSION V. Open Discussion (Thursday 7:15 - 10:15 PM)

Chairman: Fred Coury, Consultant

(A rich Asilomar tradition.)

SESSION VI. Future Directions (Friday 8:30 - 11:45 AM)

Chairman: Dennis Allison, Consultant

1. L. Charlie Hobbs, Hobbs Associates, "Applications of Video Discs".
2. George White, "Speech Recognition".
3. Dennis Allison, Consultant, "The Crystal Ball".

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PROGRAM COMMITTEE

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Dennis Allison	* Consultant
Dan Conway	Hewlett-Packard
Fred Clegg	Hewlett-Packard
Fred Coury	* Consultant
Al Despain	U C Berkeley
Lloyd Dickman	* DEC, U C Berkeley
Mike French	Computer Avionics
Ted Laliotis	Hewlett-Packard
Stan Mazor	* Intel
Dave Patterson	U C Berkeley
Bruce Favenel	* Language Resources
Peter Verhofstadt	* Fairchild
John Wakerly	Consultant

\* denotes Session Chairman

# EIGHTH ANNUAL ASILOMAR MICROCOMPUTER WORKSHOP

*April 28 - 30, 1982*

## **Applications Wednesday, 13:30 - 17:00**

Chairman: Larry Leifer, Stanford University

- Chuck Buckley, Stanford University.  
*Real-time Interactive Control of a Robot*
- William La, VA Rehabilitation Engineering and Development Center.  
*Control Requirements for an Omnidirectional Land Vehicle*
- Larry Leifer, Stanford University.  
*Interactive Robotics and Smart Product Design*

## **Software Wednesday 19:15 - 22:00**

Chairman: Dennis Allison, Free Thinker

- Gary Kildall, Digital Research.  
*16 Bit Operating Systems*
- Jim Ready, Hunter & Ready.  
*Silicon Operating Systems*
- Robert Childs, Intel Corporation.  
*Operating System Issues and the Intel 286*
- Dick Karpinski, Volition Systems.  
*Modula II and Languages for Programming*
- Paul Heckel, Interactive Systems Consultants.  
*Programming Interactive Software*
- Dennis Allison, Wawona Research Group.  
*Managing Segmented Address Spaces*

## **Technology Thursday 08:30 - 11:45**

Chairwomen: Irene Watson, Irene Watson Associates

- Dick Anderson, R. C. Anderson, Inc.  
*Multi Source: IC Design Supported by Multiple Fab Houses*
- Jeffery Siskind, MIT Lincoln Labs.  
*The Latest and Greatest Silicon Compiler*



- Jim Lipman, VLSI Technology.  
*Silicon Foundries: How They Support Custom IC Development*
- Richard Eden, Gigabit Logic.  
*Comparison of IC Technologies and the role of GaAs*

### Architecture *Thursday 13:30 - 17:00*

Chairperson: Ted Laliotis, Hewlett-Packard

- Glen Edens, Grid Systems.  
*The Compass Computer and the Navigator System: A personal computing tool for executives*
- Jim Blackman and Jim Dowe, Excalibur Technologies.  
*A Multidimensional Adaptive Pattern Recognition Processor for Applications in Natural Language Processing and Voice Recognition*
- George White, Wester Digital.  
*The WD-Nu machine: a high performance workstation*
- Chandru Murthi, Computer Works.  
*Data Base Aspects and File Structure of the Pick Operation System*
- Alan Kay, Atari.  
*Thoughts on Personal Workstations*

### OPEN DISCUSSION *Thursday 19:15 - 22:00*

Chairperson: Fred Coury, Fred Coury Associates

A rich Asilomar Tradition. This is the free for all session in which you have the opportunity to say those things which you would regret in other contexts. Be sure to contact Fred early if you wish to say your piece.

### Future Directions *Friday 08:30 - 11:45*

Chairperson: Tom Whitney, Melchor Venture Management

- Dave Farber, Electrical Engineering Department, University of Delaware
- H. Yonezawa, Senior Engineer, Hitachi Microcomputer
- Lee Felsenstein, Vice President of Engineering, Osborn Computer
- Lynn Whuttington, Manager, Advanced Systems, Motorola Corporation

# Ninth Annual IEEE Asilomar Microcomputer Workshop April 27-29, 1983

## Technology: *Peripherals for Microcomputers*

WEDNESDAY, 13:30-17:00

CHAIRPERSON: L. C. HOBBS, HOBBS ASSOCIATES

- L. C. Hobbs, Hobbs Associates *An Introductory Overview to Peripherals for Micros*
- Jerry Drexler, Drexler Technologies *Optical Cards for Microcomputers*
- Job Eddy & Paul Ralston, Koala Technologies *An Inexpensive Graphics Tablet*
- Al Hoagland, IBM *Magnetic Storage Trends for Microcomputers*

## Software: *New Directions in Programming*

WEDNESDAY, 19:15-22:00

CHAIRPERSON: DENNIS ALLISON, STANFORD UNIVERSITY

- Peggy Asprey, D.A.V.I.D. Systems *Mixed Metaphors--Language-Independent Object-Oriented Software*
- Marian Catelain & Bruce Daniels, Apple Computer *Lisa's Software Architecture*
- Laura Gould *Interactive Computer Graphics for Intuitional Problem Solving (video tape -- March 1982)*
- John Allen, The Lisp Company *LOGO LISP and all that.*

## Hardware: *Graphics*

THURSDAY, 08:30-11:45

CHAIRPERSON: CARLO SEQUIN, U.C. BERKELEY

- Andy Bechtolshcim, SUN Microsystems *The SUN Workstation*
- Jim Clark, Silicon Graphics *The Iris Graphics System*
- Fred Langhorst, Digital Research *GSX-A Software Virtual Device Interface*
- Tom Clarkson, Graphics Software *The Graphics Software Approach to Graphics Software*

**Applications: *Medicine and the Arts***

THURSDAY, 13:30-17:00

CHAIRPERSON: JOHN WARTON, APPLICATIONS RESEARCH

- Bob White & Les Atlas, Stanford University *A Portable Real-time Speech Processor for Auditory Prothesis*
- Ted Adams, Medtronic *A Portable Heart Monitoring and Recording System*
- Kris Brown, Lucasfilm *The Use of Microcomputers in Filming Cinematic Special Effects*
- Robin Jigout, Syntauri *The Use of Microcomputers in Music Synthesis*

**Open Discussion: *A Rich Asilomar Tradition***

THURSDAY, 19:15-22:00

CHAIRPERSON: FRED COURY, FRED COURY ASSOCIATES

Negotiate with Fred Coury for your moment of fame and glory. Everyone not on the formal program (and even those that are) are welcome to discuss whatever they wish subject to the whims of our interlutor.

**Future Directions: *Robotics, AI, CAD, and more***

FRIDAY, 08:30-11:45

CHAIRPERSON: WAYNE AMACHER, APPLIED TECHNOLOGY

- Harry Tennant *Artificial Intelligence: Natural Language Processing*
- Moshe Gray, Daisy Systems Corporation *Computer Aided Engineering: Vertical Integration of the Design Process*
- John Wehring, EMV Associates *Biochips: Biochips (Grow Your Own)*
- Carl Helmers, Robotics Age *Robotics: Carl Helmers and his robot friends.*

# Tenth Annual IEEE Asilomar Microcomputer Workshop

April 1984

## FINAL PROGRAM

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*Wednesday, 1:30-4:00pm*

**Software:** Allan M. Schiffman, Fairchild AI Lab.  
Bill Kornfeld, Quintus  
Larry Tesler, Apple  
David Patterson, U.C. Berkeley

*Wednesday, 4:15-5:00pm*

**Keynote**  
Carver Mead, Caltech

*Wednesday, 7:15-10:00pm*

**Perspective:** Jim Warren, DataCast  
Bernard Peuto, Viewtech  
Stanley Mazor, Intel  
George Cox, Intel

*Thursday, 8:30-11:45am*

**Applications:** John Wharton, Applications Research  
Gary Kildall, Digital Research  
Al Alcorn, Cumma Research  
Charles Hobbs, Hobbs Associates  
Dick Lyon, Fairchild AI Lab  
Matt Biewer, Pro-Log

*Thursday, 1:30-5:00pm*

**Systems and Business:** Jim Warren, DataCast  
Bill Godbout, Compupro  
George Morrow, Morrow Designs  
Susan Nycum, Gaston Snow  
Chuck Peddle, NNA  
John Walker, Autodesk

*Thursday, 7:15-10:00pm*

**Open Discussion:** Fred Coury, Coury Associates  
A rich Asilomar tradition.

*Friday, 08:30-11:45*

**Futures:** Dennis Allison, Stanford U.  
Jack Grimes, ITT  
Priscilla Lu, Bell Labs

ELEVENTH ANNUAL  
IEEE ASILOMAR MICROCOMPUTER  
WORKSHOP

APRIL 17 - 19, 1985

Wednesday, April 17

- 1:30-1:35pm      Opening Remarks  
John Wharton, Applications Research - Chairman
- 1:35-3:00pm      The U.C. Berkeley SPUR Project: LISP on a RISC  
John Wakerly, DAVID Systems - Chairman
- Implementing LISP on a RISC  
James Larus, U.C. Berkeley
  - The SPUR Microprocessor's Tagged Architecture  
George Taylor, U.C. Berkeley
  - Memory Hierarchies for Shared-Bus Multiprocessing Systems  
Mark D. Hill, U.C. Berkeley
  - Cache Coherency  
Susan J. Eggers, U.C. Berkeley
- 3:15-5:00pm      New Microprocessor/Microcontroller Architectures  
Jesse Jenkins, Signetics - Chairman
- The 8x401 Microcontroller  
Ata R. Khan, Signetics
  - Integrated Solutions for Third Generation "Mainframes"  
Cecil Kaplinski, Signetics
  - Intro to the 80386 Architecture and Bus  
Ken Shoemaker, Intel
- 7:15-7:45pm      Keynote Address: Future Directions in Home & Personal Computing  
Marcian E. Hoff, Consultant
- 7:45-10:00pm     Real/Useful/Promising AI Systems on PC's  
Ted Laliotis, Hewlett-Packard - Chairman
- Introduction to the AI Groundswell
  - Personal Computers as LISP Development Systems  
Stan Curtis, Gold Hill Computers
  - The M1 Expert System for PC's  
David King, Teknowledge
  - Natural Language Applications for Personal Computers  
Gary Hendrix, Symantec
  - The OPS5+ Development and Debugging System  
Paul Robertson, Artelligence
  - AI Systems on PC's  
Ken Ross, IntelliCorp
  - Expert Systems: Myth or Reality?  
Bruce D'Ambrosio, U.C. Berkeley

Thursday, April 18

- 8:30-10:15am      Peripherals: Optical & Magnetic Storage  
John Levy, Computer Structures, Inc. - Chairman
- Storage Industry Perspective  
Al Hoagland, Inst. for Information Storage
  - Optical Storage for Small Computer Systems  
Leonard Laub, Vision Three, Inc.
  - The Cygnet Electronic Filing System  
Jan Janku, Cygnet Systems, Inc.
- 10:30-12:00n      Highly Personal Computers - Smaller is Different  
Chuck Clanton, Consultant - Chairman
- Human Factors for Small Computers
  - A Hand-Held Computer Architecture  
Jean-Jacques Grimaud, Assisted Intelligence Design, Inc.
  - Growing Bonsai: Software for the Small Computer  
Paul Heckel, QuickView
- 1:30-3:45pm      Dedicated Microprocessor Applications  
Michael Slater, Gryphon Engineering - Chairman
- Innovative Applications of a Four-Bit Microcomputer  
Doug Littlejohn, Logical Services, Inc.
  - The SMI Digitron Microprocessor-Based Pipette  
Bruce Koball, Bruce R. Koball, Inc.
  - Light-Beam Communications  
Courtenay Heater, Romcor Design
  - Multiprocessor Audio Computing  
David Schwartz, Compusonics
  - Measuring Software Reliability in Single-Chip Applications  
Walter Banks, Bytecraft Ltd.
- 4:00-5:30pm      Microprocessor Breakthroughs in Navigation Technology  
Fred Clegg, Hewlett-Packard - Chairman
- Ralph Eschenbach, Trimble Navigation
- Real-Time LORAN and GPS Applications  
Stan K. Honey, Etak Systems
  - The Etak Vehicular Navigation and Display System  
Tim Brown, NASA Johnson Space Center
  - PC Applications Aboard the Space Shuttle
- 7:00-11:00pm+    Open Discussion: A Rich Asilomar Tradition  
Fred Coury, Fred Coury Associates - Referee
- All those not otherwise scheduled to speak, plus those who are, are strongly encouraged to make a short presentation on whatever topic(s) they wish. Contact Fred Coury to reserve your ten-minute time slot.

Friday, April 19

9:00-10:45am Multiprocessing System Architectures  
Allan Schiffman, Schlumberger Computer Aided Systems - Chairman

- Multiprocessor Architectures - An Overview  
Al Davis, Schlumberger Computer Aided Systems
- Parallel Processing on the DADO Machine  
Sal Stolfo, Columbia University
- The MIPS-X Multiprocessor  
Mark Horowitz, Stanford Computer Systems Lab

11:00-12:30pm Rolling Your Own Silicon  
Stan Mazor, Silicon Compilers, Inc. - Chairman

- Custom Silicon Support for Parallel Programming  
Gary Fielland, Sequent Systems
- Megacell Building Blocks  
John Stockton, VLSI Technology
- The Genesil Silicon Development System  
Sandy Wharton, Silicon Compilers, Inc.

12:45-3:00pm Cookout & Informal Discussion

- Forth, LISP, Biological Architectures, Hand Assembly,  
the 2800000, Symbol, etc.

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Program Committee:

Chuck Clanton	Ted Laliotis	Fred Terman
Fred Clegg	John Levy	John Wakerly
Fred Coury	Stan Mazor	Sandy Wharton
Jesse Jenkins	Allan Schiffman	John Wharton
	Michael Slater	

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**TWELFTH ANNUAL  
IEEE ASILOMAR MICROCOMPUTER WORKSHOP  
APRIL 23-25, 1986**

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Wednesday, April 23

- 1:30-1:35pm      Opening Remarks  
John Wharton, Applications Research - Chairman
- 1:35-3:00pm      Developments in Academia  
John Wakerly, DAVID Systems - Chairman
- Cache Performance Studies  
Anant Agarwal, Stanford University
  - Floating-Point and Co-Processor Interfaces  
Paul Hansen, U.C. Berkeley
  - A VLSI Architecture for Chess  
Carl Ebeling, Carnegie-Mellon University
- 3:15-5:00pm      ASuPs: Application-Specific Microprocessors  
Bruce R. Koball, Motion West - Chairman
- The  $\mu$ PD78312 Single-Chip Microcomputer for Process Control  
Bruce Gerhard, NEC Electronics, Inc.
  - The SMC8340 Eight-Bit Single-Chip Computer with Gate Array  
Art Kompolt, S-MOS Systems
  - The UC51 Custom Microcontroller Cell  
Sanjay Natu, Intel Corporation
  - User-Configurable ICs: A Logical Alternative  
Dave Saxby, Altera Corporation
- 7:15-8:30pm      Athematic Topics  
Jesse Jenkins, Signetics - Chairman
- Computers--Our Treacherous Ally  
George Morrow, Morrow Designs
  - Image Sensors, Portable Camera, and Credit-Card Memory  
Art Kompolt, S-MOS Systems
  - Update and Demonstration of Q&A  
Gary Hendrix, Symantec
- 8:45-10:30pm     Desktop Publishing  
Chuck Clanton, Consultant - Chairman
- High-Resolution Printing Without a Frame Buffer  
Carolyn Bell, Adobe Systems Inc.
  - Design of a Multilingual Desktop Publishing Product  
Edward de Jong, Beyond Words
  - Electronic Publishing: Anything is Possible, Nothing Easy  
Bernard L. Peuto, Concord Consulting



Thursday, April 24

- 8:30-12:00n High-Performance Micros  
Stan Mazor, Silicon Compilers Inc. - Chairman
- Implications of Faster and Higher Integration Bit-Slice  
Jim Freeman, Cypress Semiconductor
  - Branch Folding in the Bell Labs C Machine  
Rae McLellan, ATT Bell Laboratories
  - RISCs/Rewards  
Steuart Bjornsson, American Data Cable, Inc.
  - The T414 Transputer: Concurring with RISC  
Pete Wilson, INMOS Corporation
  - The Architecture of the MIPS RISC chip  
Skip Stritter, MIPS Computer Systems
  - A VLSI Parallel Supercomputer  
John Palmer, NCUBE
- 1:30-4:00pm Entertainment Technology  
Courtenay Heater, Romcor Design - Chairman
- Problems of Digital Audio Applied to Film Making  
Tomlinson Holman, Lucasfilm Ltd.
  - The MIDI Revolution  
Dave Oppenheim, Opcode Systems
  - MIDI for the Masses  
Rick Parfitt, Audio Light, Inc.
  - Synthesized Sound Libraries  
Bryan Bell, Synth-Bank
- 4:15-5:30pm Orthogonal Shotgun: Ideas on Different Directions  
Jim Warren, Wireless Digital, Inc. - Chairman
- Provocateurs:
- Steve Edelman, Supermac Technology
  - Bob McClure, Unidot, Inc.
  - Jef Raskin, Information Appliance
  - John Walker, Autodesk, Inc.
- 7:00-11:00pm+ Open Discussion: A Rich Asilomar Tradition  
Fred Coury, Fred Coury Associates - Referee
- All those not otherwise scheduled to speak, plus those who are, are strongly encouraged to make a short presentation on whatever topic(s) they wish. Contact Fred Coury to reserve your ten-minute time slot.

Friday, April 25

9:00-10:45am Design and Development Tools  
Michael Slater, Gryphon Engineering - Chairman

- An Overview of Development System Trends  
Michael Slater, Gryphon Engineering
- The Integral C Programming Environment  
Jim Besemer, Tektronix, Inc.
- The SoftAnalyst Software Performance Analysis System  
Bruce Ableidinger, Northwest Instrument Systems
- In-Circuit Emulation and the Future of Development Systems  
Keith Payea, Applied Microsystems Corporation

11:00-12:45pm Optical Disk Technology and Applications  
Ted Laliotis, Hewlett-Packard - Chairman

- The Optical Memory Industry - Where it is, Where it's Going  
Edward S. Rothchild, Rothchild Consultants
- CD-ROMs and Project Xanadu  
Thomas A. Rolander, KnowledgeSet Corporation
- The Compact Video Disc  
Lowell Noble, SOCS Research
- Observations and Conclusions on Optical Storage  
Leonard Laub, Vision Three Inc.

1:00-3:00pm Cookout & Informal Discussion  
RISC vs. CISC vs. Biological Architectures,  
the Z800000, SDI, Symbol, Chapter 11, etc.

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Program Committee:

Chuck Clanton	Bruce R. Koball	John Wakerly
Fred Clegg	Ted Laliotis	Jim Warren
Fred Coury	Stan Mazor	Bob Wedig
Courtenay Heater	Michael Slater	John Wharton
Jesse Jenkins	Fred Terman	Sandy Wharton

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ØDth Annual IEEE Asilomar Microcomputer Workshop  
April 22-24, 1987

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**Wednesday, April 22**

- 1:20-1:30pm**    **Opening Remarks**  
John Wharton, *Applications Research* - Workshop Chairman
- 1:30-3:15pm**    **Microcomputer Recreations**  
John Wharton, *Applications Research* - Session Chairman
- Inverse-Parser User Interfaces  
Chris Crawford, *Freelance Game Designer*
  - The Lure of Abstract Systems  
A.K. Dewdney, *University of Western Ontario*
  - The Beauty of Fractals  
Heinz-Otto Peitgen, *UC Santa Cruz*
- 3:30-5:00pm**    **Image Processing and I/O Devices**  
Daniel E. Brown, *Award Software* - Session Chairman
- Commercial Applications of High-Quality Graphics  
Alvy Ray Smith, *Pixar*
  - Optical Data Entry: Constraining the Problem is Not the Solution  
James Faulkerson, *TransImage Corp.*
  - RCA's DVI: CD-ROM + VLSI ASICs  
Stan Mazor, *Silicon Compiler Systems Corp.*
- 7:00-8:30pm**    **Neural Computing: Biological Background**  
Fred Coury, *Fred Coury Associates* - Session Chairman
- Introduction to Neural Computing  
Fred Coury, *Fred Coury Associates*
  - Biological Nervous Systems  
Chuck Clanton, *Consultant*
  - Neural Net Modeling  
Mark Jurik, *ESL*
- 8:45-10:30pm**    **Neural Computing: Hardware and Applications**  
Bruce Koball, *Motion West* - Session Chairman
- Real-Time Visual Computation Using Custom Analog CMOS VLSI  
Massimo Sivilotti, *California Institute of Technology*
  - Flow-of-Activation Networks (FAN): A Novel Computing Mechanism  
Claude A. Cruz, *IBM*
  - Wafer-Scale Integrated Neural Computing: Do Two Rights Make a Wrong?  
Dan Hammerstrom, *Oregon Graduate Center*
  - Pattern Recognition of Brain Signals  
Alan S. Gevins, *EEG Systems Lab*

## Thursday, April 23

- 8:30-10:00am**    **Windowing Environments**  
Chuck Clanton, *Consultant* - Session Chairman
- Distributed Computing with the MIT X Window System  
Jon Brewster, *Hewlett-Packard*
  - NeWS, Windows, and Unix  
David S.H. Rosenthal, *Sun Microsystems*
  - The InterViews Advanced Windowing System  
Mark Linton, *Stanford University*
- 10:15-11:45am**    **New Wave Networks**  
Marc Kaufman, *Kaufman Research* - Session Chairman
- Conceptual Models for PC to Fax  
H.S. Magnuski, *Gamma Technology, Inc.*
  - Hoi Polloi Networks  
Josiah Hoskins, *MCC*
  - Potholes in the Highways of the Mind  
David R. Hughes, *Chariot Communication*
- 1:30-3:15pm**    **Microprocessor Applications**  
Michael Slater, *Gryphon Engineering* - Session Chairman
- A Networked Control System with Lots and Lots of CPUs  
Michael Slater, *Gryphon Engineering*
  - Alexis: A True Omnidirectional Wheelchair Revisited  
Doug Littlejohn, *Logical Services Inc.*
  - Operation and Control of the Space Station Robot Servicers  
Brian Lockyear, *Booz, Allen, and Hamilton*
  - PC Compatibility and 32-Bit Bus Extensions  
Holden D. Jessup, *Olivetti*
- 3:30-5:15pm**    **Athematic Topics I**  
Courtenay Heater, *Romcor Design* - Session Chairman
- Software Considerations for WORM Optical Disk Systems  
Brian A. Berg, *Berg Software Design*
  - A Proposal to Bring Software and Logic into the Intellectual Property System, E. Stuart Bjornsson, *American Data Cable, Inc.*
  - The Mechanical Universe: Visual Icons for Teaching Physics  
James F. Blinn, *Jet Propulsion Lab*
  - Managing Creativity  
Allan Alcorn, *Apple Computer*
- 7:15-11:00pm+**    **Open Discussion: A Rich Asilomar Tradition**  
Fred Coury, *Fred Coury Associates* - Moderator

## Friday, April 24

### 8:45-10:15am $\mu$ C Law

- The Honorable Dr. Robert G. Wedig, *Wedig Consulting Services* - Presiding
- The \$100,000,000 Question: Data General and Software Bundling  
Chris Martiniak, *Feldman, Waldman, and Kline*
  - $\mu$ Code Copyright Infringement: Compatibility, Random Logic, & the Clean Room Process, Dan Siegel, *Skjerven, Morrill, MacPherson, Franklin, & Friel*
  - Copyright in Software 'Look and Feel'  
Doug Derwin, *Skjerven, Morrill, MacPherson, Franklin, & Friel*

### 10:30-12:30pm Athematic Topics II

- Dr. Jinx, *Signetics* - Session Chairman
- The 1750A CPU: An Implementation Technology Benchmark  
Ken Karakotsios, *Silicon Compiler Systems Corp.*
  - Quasi-Formal Pseudo-Proof of Likely Correctness in an IEEE Floating-Point Micro, Pete Wilson, *Inmos*
  - The Standard that Isn't: An Add-In Board Designer's View of PC Compatibility, Trevor G. Marshall, *Definicon Systems Inc.*
  - Assessment of Technological Long-Shots  
Dennis Allison, *Stanford University*

### 12:45-2:00pm Cookout and Informal Discussion

Nondeterministic Automata and Fuzzy Math, Massive Parallelism, the Z680486, Symbol, Triskaidekagrapobia, etc.

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### Program Committee:

Dan Brown	Marc Kaufman	John Wakerly
Chuck Clanton	Bruce R. Koball	Jim Warren
Fred Clegg	Ted Laliotis	Bob Wedig
Fred Coury	Stan Mazor	John Wharton
Courtenay Heater	Michael Slater	Sandy Wharton
Jesse Jenkins	Fred Terman	

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# Fourteenth Annual Asilomar Microcomputer Workshop

April 27-29, 1988

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Wednesday, April 27

- 1:20-1:30pm    Opening Remarks, John Wharton, *Applications Research* – Chair
- 1:30-3:00pm    Advances in Academia, John Wakerly, *David Systems* – Chair
- Gary Delp, *University of Delaware*  
  Shared-Memory Local Area Networking
  - Frank Gruliov, *San Francisco State University*  
  Self-Virtualizability of the 80386
  - Michael Smith, *Stanford University*  
  Breaking the IPC Barrier
- 3:30-5:00pm    Computer-Aided Perception, John Wharton, *Applications Research* – Chair
- Scott Fisher, *NASA Ames Research Center*  
  Telepresence and Virtual Environment Display Systems
  - Jean-Jacques Grimaud, *VPL Research, Inc.*  
  From Data Glove to Data Suit
  - Greg Kovacs, *Stanford University*  
  A Digital Axonal Interface to Human Nerve Fiber Bundles
- 7:00-10:30pm    Athematic Short Talks, Bob Wedig, *Wedig Consulting Services* – Chair
- David Rosenthal, *Sun Microsystems*  
  Avoiding Camels in Committee Design Standards
  - Kim Rubin, *Force Computers Inc.*  
  Why Everything You Know About RISC is Wrong
  - Gary Schwede, *Consultant*  
  Making Hardware Hard to Clone, Even if You're Not IBM
  - Marty Graham, *UC Berkeley*  
  Ethernet Through Standard Telephone Lines
  - Jim Blinn, *Cal Tech*  
  Educational Animation
  
  - Tom Walker, *Millenia Design Group*  
  Piezomotors
  - John Walker, *Autodesk, Inc.*  
  Experiments with Artificial Life
  - Brian Kelly, *Lucasfilm*  
  High-Resolution Sound Processing
  - Todd Rundgren, *Utopia Software Development*  
  Interface Design for Enhanced Creativity
  - Nolan Bushnell, *Axon*  
  Robots in the Office of the Future
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## Thursday, April 28

- 8:30-10:00am Order Out of Chaos, Bruce Koball, *Motion West* – Chair
- Ted Kachler, *Apple Computer*  
Randomness and the Ratchet: Program Evolution
  - Rudy Rucker, *San Jose State University*  
Cellular Automata: Symbiotic Programming on the CAM-6
  - Julian Uschersohn, *VLSI Technology, Inc.*  
Chaotic Dynamical Systems for Pedestrians
- 10:30-12:00n Child's Play: Computing at an Early Age, Bruce Koball, *Motion West* – Chair
- Ron Milner, *Applied Design Laboratories*  
The Future of Smart Toys
  - Chad Mitchell, *Great Wave Software*  
Educational Software and Creativity
  - Ann McCormick, *Picodyne Corporation*  
Video Play: Interactive Video for Children
  - Mike Clark, *Apple Vivarium Project*  
Leveraged Learning: HyperLego
- 1:30-3:15pm  $\mu$ P Device Architecture, Michael Slater, *MicroDesign Resources* – Chair
- Robert Garner, *Sun Microsystems*  
SPARC and the Future Directions of  $\mu$ P Architecture
  - Mike Johnson, *Advanced Micro Devices*  
The Architecture of the AMD 29000
  - Mitch Alsup, *Motorola, Inc.*  
The Motorola 88000
  - Lionel Smith, *Intel Corporation*  
The 80960 Architecture in Embedded Control
  - Brian Case, *Apple Computer*  
RISC Emulation of Existing Architectures
- 3:45-5:00pm  $\mu$ P Directions Panel Discussion, Michael Slater, *MicroDesign Resources* – Chair
- Above speakers to be joined by:
- Bill Moyer, *Motorola, Inc.*
  - David Schanin, *National Semiconductor*
  - Ken Shoemaker, *Intel Corporation*
  - Skip Sritter, *MIPS Computer Systems*
- 7:00-11:00pm+ Open Discussion: *A Rich Asilomar Tradition*  
Jesse Jenkins, *Sigmetrics* – Acting Moderator  
(Contact Dr. Jinks any time after registration for time slot assignment)

Friday, April 29

- 8:30-10:00am Quick-Turn ASICs & Design Technology  
Sandy Wharton, *Silicon Compiler Systems Corporation* – Chair
- David Wood, *UC Berkeley*  
Functional Simulation of a Cache Controller
  - Ken McElvain, *Silicon Compiler Systems Corporation*  
ATG – How to Tell if Your ASIC Really Works
  - Bill Barrett, *LASA Industries, Inc.*  
Direct Laser Gate Array Customization & ASIC Strategies
- 10:30-12:00n Orthogonal Shotgun, Jim Warren, *Silicon Gulch Gazette* – Chair
- Steve Edelman, *SuperMac Technology*
  - Ted Nelson, *Autodesk, Inc.*
  - Ron Henley, *University of San Francisco*  
*...and other provocateurs*
- 12:30-3:00pm Lunch and Informal Discussion, Monterey Bay Aquarium
- Mike Lee, *Monterey Bay Aquarium Research Institute* – Integration of Instruments and Computers for Multimedia-Based Underwater Research
  - Aquarium Tour

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Program Committee:

Fred Clegg	John Wakerly	Fred Terman
Fred Coury	Bruce Koball	Jim Warren
Courtenay Heater	Ted Laliotis	Bob Wedig
Marc Kaufman	Stan Mazor	John Wharton
Jesse Jenkins	Michael Slater	Sandy Wharton

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# Fifteenth Annual Asilomar Microcomputer Workshop

April 26-28, 1989

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Wednesday, April 26

- 1:20-1:30pm** Opening Remarks, John Wharton, *Applications Research* – General Chair
- 1:30-3:00pm** Technology Updates, Brian A. Berg, *Berg Software Design* – Chair
- Khaled El-Ayat, *Actel Corporation*  
Architecture and Testability of Anti-fuse Field-Programmable Gate Arrays
  - Eric Amador, *Amador Designs*  
Tools and Techniques for ASIC Design and Verification
  - Patrick Boyle, *Stanford University*  
Hardware/Software Considerations for Cache Design
- 3:30-5:00pm** Emerging Trends in Data Handling, Brian Berg, *Berg Software Design* – Chair
- Keith Gunn, *Document Automation Consulting*  
Applications Created by Data Compression Technology
  - Leonard Laub, *Vision Three Incorporated*  
Important New Technologies Which Have Not Yet Saved the Industry
  - Bob Evans, *Teletext Communications, Inc.*  
Teletext Today and in the Future
- 7:00-8:30pm** Athematic Short Talks, Bob Wedig, *Wedig Consulting Services* – Chair
- Stan Mazor, *Synopsis*  
Alternatives to Random Logic
  - Bruce Ableidinger, *Cadre-MicroCASE*  
Alternatives to ICE for RISC
  - Dennis Allison, *Stanford University*  
Fundamental Limits
  - Robert G. Kennedy III, *Douglas Aircraft Company*  
Technological Threats to Civil Liberties
  - Bob Jacobson, *California State Assembly Utilities & Commerce Committee*  
A Computer User's Bill of Rights
- 9:00-10:30pm** More Athematic Short Talks, Bob Wedig, *Wedig Consulting Services* – Chair
- Dan Shapiro, *Advanced Decision Systems*  
The Astronaut and the Banana Peel: An EVA Retrieval Scenario
  - Alan Norman, *ETAK Incorporated*  
ETAK: The Perils of Being Too Soon
  - Michael R. Levy, *Technology Strategies Incorporated*  
The VC Marriage Broker
  - Peter Antoniak, *Solar System Software*  
Self-Publishing on a Shoestring
  - Ron Milner, *Applied Design Labs*  
Pushing the Envelope in High-Tech Toy Design

## Thursday, April 27

- 8:30-10:00am** Household Networks and Entertainment Technology, Ted Laliotis, *Hewlett-Packard* – Chair
- Barry Bronson, *HP Labs*  
HDTV: Current Overview and Future Directions
  - Don Pezzolo, *Diablo Research Corporation*  
CEBus: The Emerging Home-Automation Standard
  - Bob Dolin, *Echelon Systems*  
Local Operating Networks (Consumer/Industrial Applications)
- 10:30-12:00n** Vaguely Sound-Related Stuff, Brian Case, *Consultant* – Chair
- Malcolm Slaney, *Apple Computer*  
Implementing Cochlear Models
  - David Schwartz, *CompuSonics*  
SCSI Audio and CSX
  - Robert Sloan, *Cube Root*  
The Digital Audio Standard: AES/EBU
- 1:30-3:00pm** Superscalar Architectures, Michael Slater, *MicroDesign Resources* – Chair
- Mike Johnson, *Advanced Micro Devices*  
Limits to Concurrency
  - Val Popescu, *Metaflow Technologies*  
The Metaflow Architecture
  - Mitch Alsup, *Motorola*  
Multiple-IPC CPUs for Sequential Instruction Sets
  - Nick Tredennick, *Tredennick, Inc.*  
Speeding Up CISC Processors
- 3:30-5:00pm** New Microprocessors, Michael Slater, *MicroDesign Resources* – Chair
- Steve McGeady, *Intel Corporation*  
Intel 80960 Futures
  - Neal Margulis, *Intel Corporation*  
The Intel i860 Architecture and Applications
  - Ken Shoemaker, *Intel Corporation*  
Inside the Intel 80486
  - Pat LaViolette, *Motorola*  
The 68332 – a 68020-Based Microcontroller
- 7:00-11:00pm+** Open Discussion: *A Rich Asilomar Tradition*  
Fred Coury, *Fred Coury Associates* – Moderator  
(Contact Fred any time following registration for time slot assignment)

## Friday, April 28

**8:30-10:00am Object-Oriented Programming Tools, Bruce Koball, *Motion West* – Chair**

- Neal Goldstein, *Neal Goldstein Design Inc.*  
Adventures in Object-Oriented Programming
- John Loram, *Bio-Engineering Research Labs*  
Development and Debug Problems in Real-Time Environments
- Mel Pirtle, *Savoir*  
Object-Oriented Methods and Tools for Real-Time Environments

**10:30-12:00n Electronic Freedom, Privacy, and Civil Liberties, Jim Warren – Chair**

- Gary Chapman, *Computer Professionals for Social Responsibility*  
Civil Liberties Issues & Computing in the USSR

**Panel Discussion**

- Robert G. Kennedy III, *Douglas Aircraft Company*
- Lee Felsenstein, *Goleemics, Inc.*
- Mary Eisenhart, *MicroTimes*
- Gary Chapman, *CPSR*

**12:30-2:30pm Lunch and Informal Discussion**

*Barbeque/Picnic Area*

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**Program Committee:**

Brian Berg	Marc Kaufman	Fred Terman
Brian Case	Bruce R. Koball	John Wakerly
Fred Clegg	Ted Laliotis	Jim Warren
Fred Coury	Stan Mazor	Bob Wedig
Courtenay Heater	Ken Shoemaker	John Wharton
Jesse Jenkins	Michael Slater	

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# Sixteenth Annual Asilomar Microcomputer Workshop

April 18-20, 1990

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## Wednesday, April 18

**1:20-1:30pm** Opening Remarks, John Wharton, *Applications Research Inc.* – General Chair

**1:30-4:45pm** Technology and Standards Update, Jim Warren, *DataCast* – Chair

- Peter Chen, *University of California/Berkeley*  
Redundant Arrays of Inexpensive Disks (RAID)
- Joe Decuir, *Everex Systems/Cygnat Division* – Telecommunications for  
Microcomputers: Advances in Modems and Fax Modems
- Ronald B. Arps, *IBM Almaden Research Center*  
Research Toward a Standard for Progressive Bi-Level Image Compression
- John Newkirk, *Peregrine Display Technology*  
HDTV Perspective
- Paul Saffo, *Institute for the Future*  
Making Sense of Groupware
- Bob Jacobson, *Human Interface Technology Lab*  
State and Federal High-Technology Industrial Practices
- Robert G. Kennedy III, *McDonnell-Douglas Corporation*  
Technological Threats Revisited: Big Brother Part II

**7:00-10:30pm** Athematic Short Talks, Bob Wedig, *Wedig Consulting Services* – Chair

- Daniel G. Shapiro, *Advanced Decision Systems*  
Dark Matter
- Leonard Laub, *Vision Three Incorporated*  
Boring but Profitable Multimedia Applications
- Allan Alcorn, *Apple Computer*  
Multimedia at Apple
- Nancy Blachman, *Variable Symbols*  
Developing Help Facilities for Sophisticated Software
- Jim Blinn, *Cal Tech*  
Animated Education and Project "Mathematics!"
- David S. H. Rosenthal, *Sun Microsystems* – Kafka & Windows: Why the Government Wants a Window System That's Less Secure Than the One You Want
- David M. Schwartz, *CompuSonics*  
Pay Per Listen
- Steve Purcell, *C-Cube Microsystems*  
CCITT/ISO JPEG & MPEG ASICs
- Carl Helmers, *Helmers Publishing, Inc.* – High-Temperature Superconductivity:  
Why We Won't Have A Workstation in a Dewar Jar This Year
- Paul Saffo, *Institute for the Future*  
The Zen of Technological Change

## Thursday, April 19

- 8:30–12:00n**    **Emerging Technologies**, Bruce Koball, *Motion West* – Chair
- Stan Tomlinson, *Neural Semiconductor*  
Implementing Neural Networks in VLSI
  - Mark Holler, *Intel Corporation* – Analog Circuits and Floating-Gate Devices for Neural Network Implementations
  - Carlos Tapang, *Syntonic Systems, Incorporated*  
Adaptive Resonance in Silicon
  
  - Howard Davidson, *Sun Microsystems*  
IC Packaging Isn't Just Seymour's Problem
  - Joe Tate, *Ambient Research*  
ElectroSeismic Phenomena
  - Mark Jurik, *Ed-U-Tech Productions*  
Automated Urban Reverse Engineering
  - Julian Uschersohn, *Dazix*  
Fundamental Limits to Computation
- 1:30–5:00pm**    **Multimedia, Hyperspace, and Virtual Reality**, Brian A. Berg, *Berg Software Design* – Chair
- Mark Heyer & Martine Boot, *Heyer Tech*  
Engineering Information Systems for Maximum Bandwidth
  - Abbe Don, *In Context*  
Interactive Narrative: An Oxymoron?
  - Chip Krauskopf, *Intel Corporation*  
The DVI Multimedia Office of '92
  - Bernard Peuto, *Sun Microsystems*  
Digital World: The Evolution of Multimedia
  
  - Eric Gullichsen, *Sense8*  
Making Virtual Reality Commercially Possible
  - Eric Lyons, *Autodesk*  
Virtual Reality & Hyperspace: Does the Emperor Wear Virtual Clothes?
  - Jaron Lanier, *VPL Research*  
The Dawn of the RealityNet
- 7:00–11:00pm+**    **Open Discussion: A Rich Asilomar Tradition**  
Fred Coury, *Fred Coury Associates* – Moderator  
(Contact Fred any time following registration for time slot assignment)

## Friday, April 20

### 8:45–11:45am Microprocessor Technology, Marc Kaufman, *Kaufman Research* – Chair

- Bill Ledbetter, *Motorola*  
The Motorola 68040 Design Methodology
- Steve McGeady, *Intel Corporation*  
Intel's Next-Generation High-Performance i960 Microprocessor
- Martin Schmookler, *IBM*  
RISC System/6000 Processor Architecture and Organization
- Bruce Ableidinger, *Cadre Technologies*  
Visibility into the Dynamics of Real-Time Systems
- Pete Wilson, *Ex-Prisma*  
How to Screw Up a GaAs Workstation Startup

### 1:00–3:00pm Technology's Role in Changing Society, John Wharton, *Applications Research Inc.* – Moderator

- Allan Alcorn, *Apple Computer*
- Lee Felsenstein, *Goleemics, Inc.*
- Matthew T. Kaufman, *University of California at Santa Cruz*
- Robert G. Kennedy III, *McDonnell-Douglas Corporation*
- Carlos Tapang, *Syntonic Systems*
- Julian Uschersohn, *Dazix*

### Innovation and Intellectual Property Laws, Michael Slater, *MicroDesign Resources* – Moderator

- Peter Antoniak, *Solar Systems Software*
- Allen Baum, *Apple Computer*
- Chris Martiniak, *Feldman Waldman and Kline*
- David Rosenthal, *Sun Microsystems*

### Technology Forecast, Nick Tredennick, *Tredennick, Inc.* – Moderator

- Bruce Ableidinger, *Cadre Technologies*
- Bernard Peuto, *Sun Microsystems*
- Kim Rubin, *GreenSpring Computer*
- Paul Saffo, *Institute for the Future*
- Abigail Shaw, *Shaw Consulting*
- John Walker, *Autodesk*

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### Program Committee:

Brian Berg	Marc Kaufman	Fred Terman
Brian Case	Bruce Koball	John Wakerly
Fred Clegg	Ted Laliotis	Jim Warren
Fred Coury	Stan Mazor	Bob Wedig
Mary Eisenhart	Ken Shoemaker	John Wharton
	Michael Slater	

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# Seventeenth Annual Asilomar Microcomputer Workshop

April 24–26, 1991

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## Wednesday, April 24

**1:20–1:30pm** Opening Remarks, John Wharton, *Applications Research, Inc.* — General Chair

**1:30–3:00pm** Data Input and Delivery Systems, Brian Berg, *Berg Software Design* — Chair

- Phil Bernzott, *Consultant*  
An Overview of the State of OCR Technology
- Jim Montgomery, *Opcode Systems, Inc.*  
PageBrush: A Hand-Held Page Scanner and Mouse
- Lee Felsenstein, *Reddy Information Systems*  
RED: A Portable CD-ROM-based Information System

**3:30–5:00pm** Data Compression, Brian Berg, *Berg Software Design* — Chair

- William Elswick, *Ediflex System*  
An Overview of Digital Audio Interchange and Compression
- John Stautner, *Digital Multimedia Associates*: What Does MPEG Audio Really Mean, What Does It Sound Like, and How Do You Get What You Really Want?
- Ron Arps, *IBM Research Division*  
Does Using JBIG Imply an Absence of Gray Matter?
- Adriaan Ligtenberg, *Storm Technology*  
How Color Will Change the Computing Environment of the '90s

**7:30–10:30pm** Athematic Short Talks, Robert Wedig, *Wedig Consulting Services* — Chair

- Leonard Laub, *Vision Three, Inc.*: The Underlying Limits of Data Compression: Thermodynamics in Your Computer
- David Patterson, *UC Berkeley*  
Cheap Gigabytes: Adding a New Layer to the Memory Hierarchy
- Mark Jurik, *Jurik Research*  
Comparative Control Techniques
- Tony Requist, *GeoWorks*  
The GEOS Operating System
- Bob Dolin, *Echelon*  
The LONBUILDER Development System for Distributed Control
  
- Dan Siegel, *Irell & Manella*  
Recent Developments in Software Patent and Copyright Law
- Chad Mitchell, *Great Wave Software*  
Interface Design for Children's Programs
- Carol Curry, *Silicon Graphics*  
What Do Women Really Want?
- Bruce Lightner, *Metaflow Technologies*  
Zen and the Struggle Between Communism and RISC

## Thursday, April 25

- 8:15–10:00am** **Egregiously Parallel Computers**, Fred Clegg, *Raynet* — Chair
- Peter Christy, *MasPar Computer*  
Why Massive Parallelism Now, and How?
  - Greg Papadopoulos, *MIT Laboratory for Computer Science*  
All Parallel Machines Will Look The Same
  - Jeff Deutsch, *Deutsch Research*  
Multiprocessor Personal Computers
  - Brewster Kahle, *Thinking Machines Inc.*  
Wide-Area Information Servers: A Supercomputer on Every Desk
- 10:30–12:00n** **Better User Interfaces**, Chuck Clanton, *Aratar* — Chair
- Chuck Clanton, *Aratar*  
Time, Space, and User Illusion
  - Doug Blewett, *AT&T Bell Labs*  
Toolkit Graphics
  - Robert Carr, *Go Corporation*  
Why PenPoint?
- 1:30–3:00pm** **The Matrix: Worldwide Personal Networks**, Bruce Koball, *Motion West* — Chair
- Dave Farber, *The University of Pennsylvania*  
NREN and the Future of Populist Computing
  - John S. Quarterman, *Texas Internet Consulting*  
Electronic Publishing Via Networks
  - Mark Graham, *Pandora Systems*  
Exploring the Matrix with a Cyberspace Cockpit
- 3:30–5:00pm** **Settling the Electronic Frontier**, Bruce Koball, *Motion West* — Chair
- Jim Warren, *DataCast*  
Computer Freedom and Privacy
  - Mitch Kapor, *The Electronic Frontier Foundation*  
Civil Liberties in Cyberspace
  - John Perry Barlow, *Grateful Dead Productions*  
Bringing the Settlers In
- 7:00–7:30pm** **Ad Hoc Working Group: Can Bill Gates Be Stopped?** John Wharton,  
*Xanthrax Communications* — Moderator
- 7:30–11:00pm+** **Open Discussion: A Rich Asilomar Tradition**, Jim Warren — Timemaster  
(Contact Jim any time after registration for time slot assignment.)



## Friday, April 26

### Dawn Beach Walk

**9:30–11:30am Design Strategies for Future Processors: Getting Past the Performance Plateau**, Michael Slater, *Microprocessor Report* — Moderator

*How much longer will chip designers be able to continue the performance advances of the past? Which new implementation techniques are worth the hassle, and which are just marketing hype? What's the rationale for moving beyond 32 bits? Does architecture really matter?*

Panel discussion participants will include:

- Don Alpert, *Intel Corporation*
- Keith Diefendorff, *Motorola*
- Mike Johnson, *AMD*
- Bruce Lightner, *Metaflow Technologies*
- Tom Riordan, *MIPS Computer Systems*
- Alon Shacham, *National Semiconductor*

**1:00–3:00pm Open Discussion:**

- **The Ills of Engineering Education**, Nick Tredennick, *TechNerds* — Moderator
- **Selling Our Souls to Foreign Competition**, Brian Case, *Consultant* — Moderator
- **How to Make Technology Exciting**, Courtenay Heater, *Romcor Design* — Moderator

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### Program Committee:

Brian Berg	Marc Kaufman	Fred Terman
Brian Case	Bruce Koball	Nick Tredennick
Chuck Clanton	Ted Laliotis	John Wakerly
Fred Clegg	Stan Mazor	Jim Warren
Fred Coury	Ken Shoemaker	Bob Wedig
Mary Eisenhart	Michael Slater	John Wharton

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# The Eighteenth Annual Asilomar Microcomputer Workshop

April 22-24, 1992

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## Wednesday, April 22

- 1:30-1:40pm** Opening Remarks, John Wharton, Applications Research — General Chair
- 1:40-3:00pm** Wireless Networking Technology, Brian Berg, *Berg Software Design* — Chair
- Alan Frank, *M&T Publishing*  
Working Without Wires
  - Robert Stillman, *Theseus Technologies*  
RF-Based Modems and WANs
  - Dewayne Hendricks, *Tetherless Access, Ltd.*  
Recent Developments in Wireless Metropolitan-Area Networks (MANs)
- 3:30-5:00pm** Network Applications and Online Services, Jim Warren, *Autodesk/MicroTimes* — Chair
- Marc Stiegler, *Xanadu-AMIX*  
Implementing Online Marketplaces for Information and Consulting
  - Dave Farber, *University of Pennsylvania*  
The Dirt Road to the Gigabit Highway
  - Erik Fair, *Apple Computer*  
What Happens After We All Connect Up?
- 7:30-10:30pm** Athematic Short Talks, Robert Wedig, *Wedig Consulting* — Chair
- Lowell Noble, *SOCS Research, Inc.*  
Can Enhanced NTSC (QDTV) Rival HDTV?: Cost vs. Quality
  - Bill Elswick, *Ediflex Systems*  
Silicon Behind the Silver Screen: A Computer Audio Editing System
  - Allan Alcorn, *Digital FIX*  
Desktop Video Authoring Tools
  - Vic Kley, *Stylus*  
A Vision of Second-Generation Pen Computing
  - Paul Monus, *British Petroleum Chemicals*  
Life-or-Death Applications
  - George Rikker, *iN Machines*  
Microkernels: The Next Wave of Operating System Architectures
  - Mark Heyer, *HeyerTech*  
Long-Term Memory and the Potential for Sentient Machines
  - Larry Press, *CSUDH*  
Computer Communications During the Soviet Coup
  - Kim Rubin, *GreenSpring Computers*  
Using Technology to Locate Urban Gunfire

## Thursday, April 23

8:30–10:00am Future Technology: Leading Edge and Beyond, Bruce Koball, *Motion West* — Chair

- Julian Uschersohn, *Hitachi MicroSystems Inc.*  
Fuzzy Logic Tutorial
- John Gilmore, *Cygnus Support*  
Cryptography Update and Anonymous Cash
- Eric Drexler, *Foresight Institute*  
Molecular Manufacturing and Computation

10:30–12:00n New Microprocessor Architectures, Michael Slater, *Microprocessor Report* — Chair

- Dennis Allison, *HaL Computer Systems, Inc.*  
A High-Performance Implementation of SPARC
- John Sell, *Apple Computer*  
PowerPC Architecture Rationale
- Mike Uhler, *Digital Equipment Corporation*  
DEC Alpha: Why a New RISC?

Panel Discussion: Does Microcomputer Architecture Really Matter?

Michael Slater, *Microprocessor Report* — Moderator

Panelists will include the above speakers, to be joined by:

- Keith Diefendorff, *Motorola*
- Ken Shoemaker, *Intel Corporation*

1:30–3:00pm Multimedia Tools and Applications, Brian Berg, *Berg Software Design* — Chair

- Mark Gang, *Starlight Networks*  
LAN-Based Digital Video
- Frank Schwartz, *Forward Motion*  
Multimedia Glue: Bonding the Pieces with Extended Control
- Adriaan Ligtenberg, *Storm Technology*  
Simplifying Color Publishing
- Janey Fritsche, *TechnoTribe*  
Interactive Multimedia as a Force for Good

3:30–5:00pm New User Interfaces, Chuck Clanton, *Aratar* — Chair

- Cary Kornfeld, *Princeton University*  
Stereo Television
- Emilie Young, *EmVision*  
Story And User Interface Design
- Chuck Clanton, *Aratar*  
Animated Environments

7:30–11:00pm+ Open Discussion: A *Rich* Asilomar Tradition, Mary Eisenhart, *MicroTimes* — Timemaster

(Contact Mary any time after registration for time slot assignment.)

## Friday, April 24

**7:30–9:00am Self-Study Beachwalk**  
*[Attendance optional]*

**9:30–10:45am Competitiveness and Intellectual Property, Bruce Koball, *Motion West* — Chair**

- Walter Banks, *Byte Craft Ltd.*  
A World Competitive Environment
- Chris Martiniak, *Feldman, Waldman & Kline*  
When Does Innovation Become Invention?
- Dan Siegel, *Weil, Gotshal, & Manges*  
Litigation Update
- Jerry Klein, *The Chatham Group*  
The Dark Side of the Valley: Why the Intellectual Property Wars Must Be Fought

**10:45–11:30am Software Monopolies: Mob Debate**

- Jim Warren, *Autodesk/MicroTimes* — Moderator
- Susan Nycum, *Baker & McKenzie* — Provocateur

**11:30am Conference Wrap-Up and Closing Remarks**

**12:00–1:30pm Outdoor Barbeque Lunch**

**1:30–3:00pm Free-Form Reception/Group Discussion/Open Debate**

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### Program Committee:

Brian Berg  
Brian Case  
Chuck Clanton  
Fred Clegg  
Fred Coury  
Mary Eisenhart

Marc Kaufman  
Bruce Koball  
Ted Laliotis  
Stan Mazor  
Ken Shoemaker  
Michael Slater

Fred Terman  
Nick Tredennick  
John Wakerly  
Jim Warren  
Bob Wedig  
John Wharton

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# The Nineteenth Annual Asilomar Microcomputer Workshop

April 28–30, 1993

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## Wednesday, April 28

**1:30–1:40pm** Opening Remarks — John Wharton, *Applications Research*, General Chair

**1:40–3:00pm** Technology Update: Interface Standards — John Wakerly, *Alantec*, Chair

- Joe Decuir, *Microsoft Corporation*  
The State of the Art in Dial-Up Communications
- Dave Newman, *Alantec*  
100 MBPS LANs
- Dan Bezzant, *Cirrus Logic, Inc.*  
PCMCIA Design and Applications

**3:30–5:00pm** Technology Update: The Software Crisis — John Wakerly, *Alantec*, Chair

- John Nagel, *Stanford University*  
The Programming Language Mess
- Mark G. Lentzner, *Glyphic Technology*  
Implementing the Future: A Language Designer's View
- Jack Grimes, *Taligent, Inc.*  
Programming the Colossal

**7:30–10:30pm** Athematic Short Talks — Robert Wedig, *Wedig Consulting*, Chair

- Mark Lacas, *Lone Wolf*  
Virtual Reality for Network Control
- Julian Uscherson, *Hitachi Micro Systems Incorporated*  
Chaos, Fuzzy, and Logical Paradoxes
- David S.H. Rosenthal, *Sun Microsystems*  
What's Really Interesting About Plan 9
- John Wakerly, *Alantec*  
Successful Hardware Design Without CAD
- Dan Shapiro, *Stanford University*  
The Astronaut and the Banana Peel Revisited
  
- Mike Cheponis, *California Wireless*  
The RF/Biology Connection: Should I Trash My Cellular Phone?
- Pete Wilson, *Groupe Bull*:  
Architectural Requirements of PDA-Style Products
- Rick Parfitt, *Apple Computer*  
Speech Recognition: Is it Here Yet?
- Tom Rolander, *Novell, Incorporated*  
Is There a Future to Heterogeneous Computing?

## Thursday, April 29

**8:30–10:00am Hot New Micros** — Michael Slater, *MicroDesign Resources*, Chair

- Mitch Alsup, *Ross Technology*  
A Processor Which Will Never Be Built
- Ken Shoemaker, *Intel Corporation*  
The Intel Pentium™ Microprocessor
- Keith Diefendorf, *Motorola*  
The PowerPC Microprocessor

**10:30–12:00n Visual Media Formats and Standards** — Brian Berg, *Berg Software Design*, Chair

- John Ciccarelli, *Adobe Systems*  
Adobe Acrobat: Breaking Out of ASCII Jail
- Steve McGeady, *Intel Corporation*  
Digital Video for Fun and Profit
- John Sell, *The 3DO Company*  
3DO: A Real Multimedia Standard?

**1:30–3:00pm Pocket Widgets & Personal Electronics** — Dewayne Hendricks, *Tetherless Access Ltd.*, Chair

- Chuck Berman, *EO Inc.*  
Personal Communicators: Present Implications, Future Possibilities
- Jim Valerio, *Intel Corporation*  
Pocket Gizmos from a Software Engineer's Perspective
- Mark Cummings, *SRI International*  
Applications for Personal Communicators and Pocket Gizmos

**3:30–5:00pm Patents, Copyrights, and Witchcraft** — Brian Berg, *Berg Software Design*, and Jerry Klein, *The Chatham Group*, Co-Chairs

- David Hayes, *Fenwick & West*  
Look and Feel: The State of the Law
- Gary Reback, *Wilson, Sonsini, Goodrich & Rosati*  
Reverse Engineering and Disassembly: The State of the Law
- Ronald Laurie, *Weil, Gotshal, and Manges*  
Software Patents: The State of the Law
- Mark Radcliffe, *Ware & Freidenrich*  
MultiMedia: Impacts and Implications of the Law

**7:00–7:30pm A Debate on the Future of Intel**

- Michael Slater, *MicroDesign Resources*: A Scenario for Impending Decline
- Nick Tredennick, *Tredennick, Inc.*: A Scenario for Continuing Growth

**7:30–11:00pm+ Open Discussion: A Rich Asilomar Tradition** — Mary Eisenhart, *MicroTimes*, TimeMaster

(Contact Mary any time after registration to reserve a 10-minute time slot.)

## Friday, April 30

**7:30–8:30am Self-Guided Beachwalk**  
*[Attendance optional]*

**9:00–10:30am Cryptography: Technology and Policy Issues** — Jim Warren, *MicroTimes & Autodesk, Inc.*, Chair

- Whitfield Diffie, *Sun Microsystems*  
Cryptography and Public Policy
- Philip Zimmermann, *Boulder Software Engineering*  
The Politics and Technology of Pretty Good Privacy
- John Gilmore, *Cygnus Support*  
Cypherpunk Deployment of Cryptography

**10:45–11:45am Cyberspace vs. the Real World** — Jim Warren, *MicroTimes & Autodesk, Inc.*, Chair

- Shari Steele, *The Electronic Frontier Foundation*  
The Electronic Frontier as Seen from the Beltway
- Jim Warren, *MicroTimes & Autodesk, Inc.*  
Update on Computers, Freedom & Privacy Issues

**11:45am Conference Wrap-Up and Closing Remarks**

**12:00n–1:30pm Outdoor Barbeque Lunch and Discussion** (weather permitting...)

**2:30–5:30pm Field Trip to the Monterey Bay Aquarium Marine Research Facility in Moss Landing** — Ted Laliotis, *Hewlett-Packard*, Trip Coordinator  
(Space may be limited; contact Ted or sign up at or after registration.  
Participants are to provide their own transportation to Moss Landing, and will depart directly for home thereafter.)

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### Program Committee:

Brian Berg	Marc Kaufman	Fred Terman
Brian Case	Bruce Koball	Nick Tredennick
Chuck Clanton	Ted Laliotis	John Wakerly
Fred Clegg	Stan Mazor	Jim Warren
Mary Eisenhart	Ken Shoemaker	Bob Wedig
Dewayne Hendricks	Michael Slater	John Wharton

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# The Twentieth Annual Asilomar Microcomputer Workshop

April 20–22, 1994

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## Wednesday, April 20

- 1:30–1:45pm** **Opening Remarks** — John Wharton, *Applications Research*, General Chair
- 1:45–3:15pm** **Retrospective: The First Twenty Years** — Fred Clegg, *Cirrus Aviation*, Chair
- The Birth of an Industry  
Stan Mazor, *Synopsys*
  - Computer Gamesmanship  
Alan Alcorn, *Silicon Gaming*
  - The Wonder Years  
Ted Laliotis, *Hewlett-Packard Labs*
  - Microprocessor Software: They've Been Doing It Wrong All These Years!  
Matt Biewer, *Consultant*
  - Capabilities and Other Virtual Mistakes  
Bernard Peuto, *Concord Consulting*
- 3:45–4:45pm** **Protospective: Toward the Year 2000** — John Wharton, *Applications Research*
- Programmable Architectures, the LightBus, and Geoprocessors  
Vic Kley, *Giga Operations Corp.*
  - Isotopes "R" Us: Manufacturing Artificial Transplutonic Elements  
Robert G. Kennedy III, *The ULTIMAX Group, Inc.*
- 7:30–10:30pm** **Athematic Short Talks** — Robert Wedig, *Wedig Consulting*, Chair
- Stalking Artificial Life  
Rudy Rucker, *San Jose State University*
  - Beyond MIDI  
Nick Nichols, *Probitas Corporation*
  - Pentium Processor Performance Monitoring  
Bruce Ableidinger, *Microtek International*
  - How Processing Speed Can Improve the User Interface  
Ron Avitzur, *Consultant*
  - PowerPC: Behind the Scenes  
John Sell, *The 3DO Company*
  - Marketing a Nonexistent Product  
Mark Heyer, *HeyerTech, Inc.*
  - Improving User Training with Multimedia  
Wendy Peikes, *Gain Technology*
  - Computer-Assisted Government Access  
Jim Warren, *MicroTimes & BoardWatch*
  - Crashing the Cube  
John Wharton, *Applications Research*



## Thursday, April 21

- 8:30–10:00am Reconfigurable Logic** — Nick Tredennick, *Altera Corp.*, Chair
- Programmable Logic: The Next Microarchitecture  
Nick Tredennick, *Altera Corp.*
  - Reconfigurable Processors  
Craig Warner, *Ceram Inc.*
  - How Document Understanding Will Affect System Useability  
Chuck Stormon, *Coherent Research, Inc.*
- 10:30–12:00n PowerPC or Bust!** — Michael Slater, *MicroDesign Resources*, Chair
- Does PowerPC Matter?  
Michael Slater, *MicroDesign Resources*
  - PowerPC Futures  
Keith Diefendorff, *Motorola*
  - Moving the Mac OS to PowerPC  
Philip Koch, *Apple Computer*
  - Has the Emperor Any Clothes? And Is His Underwear Clean?  
Pete Wilson, *Kiva Design*
- 1:30–3:00pm Rocket Science** — Bruce Koball, *Motion West*, Chair
- Spooks in Space: Commercial Remote Sensing  
Robert G. Kennedy III, *House Subcommittee on Space*
  - MPEG In Your Face: Direct Satellite Video Broadcasting  
Robert Sloan, *Compression Labs*
  - Rolling Your Own Rockets  
Gary Hudson, *Hudson Engineering*
- 3:30–4:45pm Sound and Fury** — Brian Berg, *Berg Software Design*, Chair
- Scalable Audio Compression and the Speed-of-Sound CD-ROM  
John Stautner, *Aware, Inc.*
  - The Design and Development of a Cost-Effective Real-Time Object-Oriented Distributed-Processor Control System for Model Trains  
Ron Milner and Robert Johnson, *Applied Design Laboratories*;  
Bruce Koball, *Motion West*; and  
Neil Young, *Liontech*
- 7:00–7:30pm RATs From the Past** — Mary Eisenhart, *MicroTimes*, Chair
- Stan Mazor: *Random Logic Replacement*
  - Nick Tredennick: *Causes Of Midlife Identity Crisis*
  - Pete Wilson: *Requiem for a Workstation*
- 7:30–11:00pm+ Open Discussion: A Rich Asilomar Tradition** — Mary Eisenhart, *MicroTimes*, TimeMaster (Contact Mary after registration to request a 10-minute time slot to speak on any subject you wish. Slot assignments will be first-come-first-served.)

## Friday, April 22

**7:30–9:00am Self-Guided Beachwalk**  
*[Attendance optional]*

**9:30–11:30am Information Infrastructure** — Dewayne Hendricks, *Tetherless Access Ltd.*, Chair

- Data Comm, Then and Now  
Sam Wood, *Modern Systems Research*
- High-Speed Network Update  
David Newman, *Alantec*
- Bay Area ATM Gigabit Testbeds  
Mark Laubach, *Hewlett-Packard Labs*
- LEO Satellites and the Information Infrastructure  
Rex Buddenberg, *Naval Postgraduate School*
- Implications of Cryptography  
Tim May, *Cryptologic*

**11:30–11:45am Conference Wrap-Up and Closing Remarks**

**12:00–1:30pm Outdoor Barbeque Lunch** (weather permitting...)

**1:30–3:00pm Open Group Discussion** (topics and format to be determined)

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### Program Committee:

Brian Berg	Marc Kaufman	Michael Slater
Brian Case	Bruce Koball	Fred Terman
Chuck Clanton	Cary Kornfeld	Nick Tredennick
Fred Clegg	Ted Laliotis	John Wakerly
Mary Eisenhart	Stan Mazor	Jim Warren
Dewayne Hendricks	Marianne Mueller	Bob Wedig
Ted Kaehler	Ken Shoemaker	John Wharton

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# The Twenty-First Annual Asilomar Microcomputer Workshop

April 19–21, 1995

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## Wednesday, April 19

**1:30–1:40pm** Opening Remarks — John Wharton, *Applications Research*, General Chair

**1:40–3:15pm** Home LANs: Device-Oriented Networking — Brian Berg, *Berg Software Design*, Chair

- A Thousand Nodes of Light (and Sound) – John Chester, *Consultant*
- Integrating Personal Entertainment, Communications, and Computing – Gary Hoffman, *SkipStone, Inc.*
- Chip Design for Set Top Boxes – Frank Schwartz, *Mainstream Control, Inc.*
- Actual Reality: Humanizing Technology – Mark Lacas, *Lone Wolf*

**3:45–4:45pm** Post-Industrial Robots — Mary Eisenhart, *MicroTimes*, Chair

- Co-Opting Cold-War Technology  
Rob Kennedy, *The Ultimex Group*
- Moore's Law in the Minefield  
John Walker, *Megalon*
- De-Mining Robot Technology  
Jean-Daniel Nicoud, *Swiss Federal Institute of Technology*

**7:30–10:00pm** Athematic Short Talks — Robert Wedig, *Wedig Consulting*, Chair

- Gaming as a Driver of Technology  
Al Alcorn, *Silicon Gaming*
- iPower Semiconductor-Based Cryptographic Solutions for Electronic Security  
Gordon Force, *National Semiconductor*
- PCMCIA Devices Using Reconfigurable Logic  
Mark Cummings, *EnVia*
- Beyond HSM: You *Can't* Manage Gigabytes the Way You Manage Megabytes  
Tom Rolander, *PG Soft*
- IrDA & Infrared Data Communications: All Heat and No Light?  
Mike Cheponis, *California Microwave*
- The Computer History Association of California and What It's Trying to Do  
Kip Crosby, *Computer History Association of California*
- Filmcraft and User Interface Design III  
Chuck Clanton, *Aratar*

**10:15–11:30pm** Wednesday Night at the Movies — John Wharton, *Applications Research*, Chair

- Making the First All-Digital Production and Why  
Robert Miller, *Pure Grain Digital Productions*
- Computer Graphics for Special Effects  
Eric Enderton, *Industrial Light and Magic*

## Thursday, April 20

- 8:30–10:00am Microprocessors** — Michael Slater, *MicroDesign Resources*, Chair
- Challenges for Superscalar x86 Execution  
Fred Weber, *NexGen*
  - The K5: AMD's First Fully-Independent x86 Design  
Mike Johnson, *AMD*
  - It's the Pipeline, Stupid  
Andy Glew, *Intel Corp.*
  - A Hybrid Architectural Model to Exploit Instruction Level Parallelism  
Kevin Rudd, *Stanford University*
- 10:30–12:00n Device Technology and Design Tools** — Bruce Koball, *Motion West*, Chair
- Behavioral Synthesis  
Charlie Smith, *Synopsys*
  - Delay Effects in Deep Submicron Technology  
Clive (Max) Maxfield, *Intergraph Electronics*
  - Next-Generation Packaging Technologies  
John Novitsky, *MicroModule Systems*
- 1:30–2:45pm The BB and the Beach Ball** — Nick Tredennick, *Altera*, Chair
- Limits to CPU Performance  
Martin Reynolds, *DataQuest*
  - Desktop Wars  
Keith Diefendorff, *Motorola*
  - OS Wars  
Bob Cousins, *AIM Technology*
- 3:15–4:45pm Are We Digitizing the Richness Out of Life?** — A.J. (Nick) Nichols, *Probitas*, Chair
- What Do You Mean, Digitizing? What Do You Mean, Richness?  
Leonard Laub, *Vision Three*
  - It Ain't Just Rocket Science  
Gary Schwede, *Stream Computers, Inc.*
  - A Menu is Not the Same as a Cookbook Which is Not the Same as a Meal —  
Experiences in Fine Arts Museums with Digital Technologies  
Steve Mayer, *San Francisco Museum of Modern Art*
- 7:00–7:30pm Remembering Gary** — Bruce Koball, *Motion West*, Coordinator
- 7:30–11:00pm+ Open Discussion: A Rich Asilomar Tradition** — Mary Eisenhart, *MicroTimes*, RAT Patrol (Contact Mary after registration to request a 10-minute time slot to speak on any subject you wish. Slot assignments will be first-come-first-served.)

## Friday, April 21

**7:00–8:00am Self-Guided Beachwalk**  
*[Attendance optional]*

**9:00–11:30am Asilomar Comes of Age: Sex, Censorship, and Cyberspace** — Jim Warren, Chuck Clanton, Cary Kornfeld, Marianne Mueller, Chairpeople

9:00am *Facts and Issues*

- Psychological, Sociological, and Medical Issues  
Chuck Clanton, *Aratar*
- Some Measures of Apparent Erotica in Cyberspace  
Marianne Mueller, *Sun Microsystems*
- Erotica Sells: A Survey of the Business (Multimedia and CD-ROM)  
Marie D'Amico, *Attorney/Writer*
- Legislative and Political Issues  
Jim Warren, *GovAccess, MicroTimes, BoardWatch, etc.*

10:10am *Problems and Perspectives (Panel Discussion)*

- Legal Problems for Computer-Based Adult Material Providers  
Jeffrey J. Douglas, *Free Speech Coalition*
- Old and New Law Enforcement Perspectives  
Frank Dudley Berry, Jr., *Deputy D.A. of Santa Clara County*
- Protecting Freedom of Expression on the Net  
Bobby Lilly, *Californians Against Censorship Together*
- Production Aspects of Adult Entertainment  
Nina Hartley, *Free Speech Coalition*

11:00am *Technological Solutions (Moderated Discussion by Workshop Attendees)*

**11:30–11:45am Conference Wrap-Up and Closing Remarks**

**12:00–1:30pm Outdoor Barbecue Lunch (weather permitting...)**

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### Program Committee:

Brian Berg	Marc Kaufman	Michael Slater
Brian Case	Bruce Koball	Fred Terman
Chuck Clanton	Cary Kornfeld	Nick Tredennick
Fred Clegg	Ted Laliotis	John Wakerly
Mary Eisenhart	Stan Mazor	Jim Warren
Dewayne Hendricks	Marianne Mueller	Bob Wedig
Ted Kaehler	A.J. (Nick) Nichols	John Wharton
	Ken Shoemaker	

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# The Twenty-Second Asilomar Microcomputer Workshop

April 17–19, 1996

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## Wednesday, April 17

- 1:30–1:45pm** **Opening Remarks** — John Wharton, *Applications Research*, General Chair
- 1:45–2:45pm** **Media Processors** — Cary Kornfeld, *Kornfeld Design Labs*, Chair
- The Mpac Media Processor  
Steve Purcell, *Chromatic Research*
  - Multimedia: It's About I/O  
David S.H. Rosenthal, *nVidia Corp.*
- 3:15–5:00pm** **Wireless Technologies in the Post-Telecom-Act-of-'96 Era** — Dewayne Hendricks, *Warp Speed Imagineering*, Chair
- Frequency Spectrum Allocation Issues  
Bennett Kobb, *New Signals Press Inc.*
  - Terrestrial Communications Issues  
Mike Cheponis, *California Wireless, Inc.*
  - Extraterrestrial Communications Issues  
Rick Voreck, *Space Systems/Loral*
  - Technological End-Runs Around Hierarchies  
Dave Hughes, *Old Colorado Communications*
- 7:30–10:30pm** **Athematic Short Talks** — Bob Wedig, *Wedig Consulting*, Chair
- Current Trends in Hard Disk Technology  
John Levy, *Quantum Corp.*
  - Java from an Outsider's Perspective  
Mark Lentczner, *Glyphic Technology*
  - The Barbarians Are At the Gateway: Will Literature Survive the Web?  
Eve Bennett-Wood, *Modern Systems Research, Inc.*
  - The Web: I Believe the Hype  
Marianne Mueller, *JavaSoft, Sun Microsystems, Inc.*
  - The Computer Museum History Center – I  
Len Shustek, *Network General*
  - The Computer Museum History Center – II  
Gordon Bell, *Microsoft*
  - "Telecom Pricing Is A Notorious Scam"  
David S.H. Rosenthal, *Vitria Technologies*
  - Hacking the Corporation  
Steve McGeady, *Intel Corp.*

## Thursday, April 18

- 8:30–9:45am** **Bullets Over Broadband** — Brian Berg, *Berg Software Design*, Chair
- Copper Access and ATM as Basic Components of Full Service Networks  
Kim Maxwell, *Independent Editions*
  - Broadband to the Masses  
Ed Moura, *Hybrid Networks*
- 10:00–11:00am** **Northwestern Exposure** — Bruce Koball, *Motion West*, Chair
- Some Thoughts on Telework  
Gordon Bell, *Microsoft*
  - On Moving to Microsoft  
Jim Blinn, *Microsoft*
- 11:15–12:00pm** **Gutless PCs and the Servers that Love Them** — Nick Nichols, *Probitas*, Moderator  
**Panel Discussion and Open Debate**
- John K. Chester, *Consultant*
  - Steve McGeady, *Intel Corporation*
- 1:30–3:30pm** **Java Technology and Security** — Marianne Mueller, *JavaSoft, Sun Microsystems, Inc.*, Chair
- Overview & The Basis of Java Security  
Marianne Mueller, *JavaSoft, Sun Microsystems, Inc.*
  - Why Java? –From a Techie Perspective  
Sami Shaio, *YAJSU*
  - Why Java? –From a Business Perspective  
Ruth Hennigar, *JavaSoft, Sun Microsystems, Inc.*
  - Programs Make Me Nervous  
Bill Cheswick, *Bell Laboratories, Lucent Technologies*
- 4:00–5:00pm** **To Infinity and Beyond!** — Bruce Koball, *Motion West*, Producer
- The Story Behind "Toy Story"  
Alvy Ray Smith, *Microsoft*
- 7:30–11:00pm+** **Open Discussion: A Rich Asilomar Tradition** — Mary Eisenhart, *MicroTimes*, RAT Patrol (Contact Mary after registration to request a 10-minute time slot to speak on any subject you wish. Slot assignments are first-come-first-served.)

## Friday, April 19

**7:30-8:30am Self-Guided Beachwalk**  
*(Attendance optional)*

**9:30-11:30am The Future of  $\mu$ P Architecture — Ken Shoemaker, *Intel Corp.*, Moderator**

**Part I: How I'd Spend 100M Transistors**

- Mitch Alsup, *Ross Technology*
- Keith Diefendorff, *AMD*
- Andy Glew, *Intel*
- Bruce Lightner, *Metaflow*
- Jack Mills, *Intel*

**Part II: Panel Discussion and Debate**

**11:30-11:45am Conference Wrap-Up and Closing Remarks**

**12:00-1:30pm Outdoor Barbecue Lunch and Discussion (weather permitting...)**

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### Program Committee:

Brian Berg	Marc Kaufman	Ken Shoemaker
Brian Case	Bruce Koball	Fred Terman
Fred Clegg	Cary Kornfeld	John Wakerly
Mary Eisenhart	Ted Laliotis	Jim Warren
Lorri Everhart	Marianne Mueller	Bob Wedig
Dewayne Hendricks	A.J. (Nick) Nichols	John Wharton

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# The Twenty-Third Asilomar Microcomputer Workshop

April 16–18, 1997

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## Wednesday, April 16

- 1:30pm** **Opening Remarks** – John Wharton, *Applications Research*, General Chair
- 1:45pm** **Conquering Heroes?: Tales from the Front** – Nick Nichols, *Probitas Corporation*, Chair
- Object Lessons from Taligent  
Jack Grimes, *Visa International*
  - Architecture of a Gaming Device  
Al Alcorn, *Consultant*
  - Cheap Access to Space  
Gary Hudson, *Hudson Engineering*
  - Architecture of a Forth-Based Internet Chip  
Chuck Moore, *The iTV Corporation*
- 3:15pm** **Break**
- 3:45pm** **Future Display Technology** – Brian A. Berg, *Berg Software Design*, Chair
- Is Electronic Holography the Ultimate Display Technology?  
Pierre St. Hilaire, *Interval Research*
  - 3D Stereoscopic Display Technology  
Lowell Nobel, *QD Technology*
  - The NV Appliance  
Ted Laliotis, *Laliotis & Associates*
- 5:00pm** **Reception and Dinner**
- 7:30pm** **Athematic Short Talks** – Bob Wedig, *Wedig Consulting*, Chair
- Computer Performance Democratization on Wall Street  
Jonathan Sandberg, *Morgan Stanley*
  - Ultra Computing and Potential Applications  
Martin Morf, *Stanford University*
  - Cable Modems: Facts and Fantasy  
Mark Laubach, *Com21, Inc.*
  - Going the Last Mile – The Real Issues  
Sam Wood, *Modern Systems Research, Inc.*
  - Breaking Out of the Sandbox  
Ken Schwartz, *Consultant*
  - Analog Logic and Verbal System Design  
Dave Wyland, *The Wyland Group*
  - Real Hypertext Publishing: What's the Web Missing and How Can We Fix It?  
Chris Peterson, *The Foresight Institute*
  - Information, Propaganda, and the Web  
Mark Hall, *ZD Labs*
  - Intelsat 708 Launch Failure  
Rick Voreck, *Space Systems Loral*

## Thursday, April 17

**8:00am Electronic Commerce** – Ted Laliotis, *Laliotis & Associates*, Chair

- Government Policy Issues and Internet Taxation  
Ted Laliotis, *Laliotis & Associates*
- Payment Systems  
Jack Grimes, *Visa International*
- Electronic Commerce Security Issues  
Bill Cheswick, Bell Labs, *Lucent Technologies*

**9:30am Break**

**10:00am WebPlayers and Internet Appliances** – Marc Kaufman, *Adobe Systems*, Chair

- Facts and Myths About PC/TV Convergence  
Michael Gold, *SRI Consulting*
- A Low-Cost Internet Access Device  
Gary Langford, *The iTV Corporation*
- WebTV Capabilities and Future Directions  
Tim Park, *WebTV*
- @Home Network Architecture: An Intelligent Perspective  
Milo Medin, *@Home Network*

**12:00n Lunch**

**1:30pm On-Line Communities** – Brian A. Berg, *Berg Software Design*, Chair

- The First Noble Truth of CyberSpace: People are People Even in the MUD  
Diane Schiano, *Interval Research*
- The Internet as a Populated Place  
Pavel Curtis, *PlaceWare, Inc.*
- On-Line Group Communication Media and Markets  
Orca Starbuck, *OnLive! Technologies*

**3:00pm Break**

**3:30pm Java and Company (Presentations and Panel Discussion)** – Marianne Mueller, *Sun Microsystems/JavaSoft*, Moderator

- Shipping Code on Shifting Sand: The PlaceWare Development War Story (So Far)  
Pavel Curtis, *PlaceWare, Inc.*
- Roaming on the Net  
Hong Bui, *Roampage*
- Experiences of Yet Another Java Startup  
Sami Shaio, *Marimba*
- Inferno and Limbo  
Rob Pike, *Bell Labs*

**5:00pm Reception and Dinner**

**7:00pm Brushes with Greatness (Video Shorts)** – Bruce Koball, *Motion West*, Stage Manager

**7:30pm Open Discussion, A *Rich* Asilomar Tradition** – Mary Eisenhart, *MicroTimes*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 18

**5:30am Pre-Dawn Comet Watch**

*(Attendance optional)*

**8:30am Internet Infrastructure** – Bob Wedig, *Wedig Consulting*, Chair

- Interpreting Internet Measurements  
John Quarterman, *MIDS*
- Behind the Scenes of Running an ISP  
Matthew Kaufman and Qarin Van Brink, *Scruz-Net*
- Modem Support for ISP Access: Speed and Reliability  
Joe Decuir, *Microsoft*

**10:00am Break**

**10:30am Microprocessor Panel Debate: If **\*\*I\*\*** Were Defining IA-64...** – "Joe Intel", Moderator

- Mitch Alsup, *Ross Technologies*
- Keith Diefendorff, *Apple Computer*
- Mike Johnson, *AMD*
- Bruce Lightner, *Metaflow*
- John Wharton, *Applications Research*

**11:45am Conference Wrap-Up and Closing Remarks**

**12:00n Outdoor Barbecue Lunch (weather permitting)**

**1:15pm Self-Organizing Group Discussion**

What Sealed Apple's Fate? Will Microprocessor Performance Hit the Wall?  
Profiting from the Year 2000 Software Problem; Dealing with the Death of Moore's Law; etc.

**2:30pm Conference Adjourns**

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### Program Committee

Brian Berg	Marc Kaufman	A.J. "Nick" Nichols
Brian Case	Bruce Koball	Ken Shoemaker
Chuck Clanton	Cary Kornfeld	Fred Terman
Fred Clegg	Ted Laliotis	Nick Tredennick
Mary Eisenhart	Stan Mazor	Bob Wedig
Dewayne Hendricks	Marianne Mueller	John Wharton

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**10:15pm Asilomar Neo-Classic Movies – Marc Kaufman, *Adobe*, Chair**

- Inventors' Hall of Fame  
Stan Mazor, *BEA Systems*
- Mars Landing Video  
Mark Laubach, *Com21, Inc.*
- Powers of Ten  
Pierluigi Zappacosta, *Logitech*
- LEO: The Automatic Office  
Len Shustek, *The Computer Museum History Center*
- The EDSAC Film  
Len Shustek, *The Computer Museum History Center*

**Thursday, April 23**

**8:30am Computers and Video: As Worlds Collide – John Wharton, *Applications Research*, Chair**

- Driving Visual Speech with Audio  
Malcolm Slaney, *Interval Research*
- The Digital Darkroom: The Design of a Science Museum Exhibit  
Bill Cheswick, *Lucent-Bell Labs*
- Mapping the Digital Boundaries of Art  
Erich Schienke, *SF Computer Museum*

**10:00am Break**

**10:15am The EPIC Debate – Ken Shoemaker, *Intel*, Chair**

- Panelists  
Ken Shoemaker, *Intel*  
Mike Johnson, *AMD*  
Kevin Rudd, *Stanford University*  
Brian Case, *Church of the Sub Optimal*

**12:00n Lunch**

**1:30pm Teeny Tiny Technology – Mary Eisenhart, *MicroTimes***

- There's Nothing Small about Nanotechnology  
Ralph Merkle, *Xerox PARC*
- "Sounds Like Science Fiction": Applications of Digital Materials Processing  
Chris Peterson, *Foresight Institute*

**2:30pm Break**

**3:00pm The Rise of Telecommunities – Mark Heyer, *HeyerTech*, Chair**

- Universal High Speed Internet Access - The Palo Alto RFP  
Mark Heyer, *HeyerTech*
- The Neighborhood Fiber Network Proposal  
Michael Silverton, *Fiberhood Networks*
- The Case for Wireless  
Dewayne Hendricks, *Com21, Inc.*
- Cable Modems - High Speed Now  
Mark Heyer, *HeyerTech*
- Open Debate

**5:00pm Reception and Dinner**

**7:15pm A Day with Scott Adams (Video Presentation) - Tia O'Brien, *SJMN Contributing Writer*, Presenter**

**7:30pm** **Open Discussion, A *Rich* Asilomar Tradition** – Mary Eisenhart, *MicroTimes*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 24

**6:30am** **Sunrise Beach Walk**

*(Attendance optional)*

**8:30am** **Athematic Talks II** – Pierluigi Zappacosta, *Logitech*, Chair

- CritSuite - Back Links to the Web  
Ka-Ping Yee, *University of Waterloo*
- Fingerprint Biometrics  
Vance Bjorn, *Digital Persona*
- FPGAs aren't Just Glue Logic Anymore  
Philip Freidin, *Fliptronics*

**10:00am** **Break**

**10:15am** **Convergence or Collision?: Software, Silicon, the NET and the Law** – Jerry Klein, *The Chatham Group*, Chair

- Overview  
Jerry Klein, *The Chatham Group*
- The Software Perspective  
George Riley, *O'Melveny & Myers*
- The Silicon Perspective  
Richard Abramson, *Heller Ehrman White & McAuliffe*
- The Net Perspective  
Mark Radcliffe, *Gray Cary Ware & Freidenrich*

**11:45am** **Conference Wrap-Up and Closing Remarks**

**12:00n** **Outdoor Barbecue Lunch (weather permitting)**

**1:15pm** **Self-Organizing Group Discussion**

Has PC productivity caused economic deflation? What is your worst case Y2K scenario? What is the next paradigm shift? Can Intel and Microsoft survive it? What's the next question that we should be asking ourselves?

**2:30pm** **Conference Adjourns**

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### Program Committee

Brian Berg	Bruce Koball	Fred Terman
Fred Clegg	Stan Mazor	Bob Wedig
Mary Eisenhart	Marianne Mueller	John Wharton
Dwayne Hendricks	Ken Shoemaker	Pierluigi Zappacosta

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*Internet Service coordinated by Matthew Kaufman and Qarin Van Brink of Tycho Networks*

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# The Twenty-Fifth Asilomar Microcomputer Workshop

April 21–23, 01999

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## Wednesday, April 21 (12/30/99 R.A.T.\*)

- 1:30pm: Opening Remarks** — **Brian Berg, Berg Software Design, General Chair**  
**John Wharton, Applications Research, Program Chair**
- 1:45pm: Bio/Tech Frontiers** — **Bob Cousins, Cousins Consulting, Chair**
- Jane C. Sargent, M.D., University of Massachusetts Medical Center: What Biotech Will Do To and For Medicine (and Y2K, etc.)
  - Larry O'Gorman, Veridicom, Inc.: Can Biometrics Obsolete Passwords, PINs and Door Keys, but *Not* Personal Privacy, Too?
- 3:15pm: Absolute Power** — **Mark Laubach, Com21, Inc., Chair**
- Suzanne Johnson, Independent: Selling Sunshine to PG&E: A True Tale of Power and Innocence in Silicon Valley
  - Amory Lovins, Rocky Mountain Institute: Hypercars™: Vehicles Worthy of the Information Age
  - Phil Karn, Qualcomm: Power to the People
- 4:45pm: Reception and Dinner**
- 7:00pm: Athematic Short Talks** — **Bob Wedig, Wedig Consulting, Chair**  
[Listed alphabetically; final speaking order to be determined]
- Tamara Munzner, Stanford University: Interactive Navigation of Large Networks
  - David Schwartz, ImaginOn, Inc.: E-Commerce Using CD-based High Bandwidth Video
  - Jack Grimes, Consultant: Chip Cards: The Ultimate Thin Client
  - David Rosenthal, Stanford University Libraries: The Long-Term Preservation of Digital Journals
  - Warren Stringer, Muse Dot Com: Building a Web of a Trillion Human Gestures
  - Mike Cheponis, California Wireless: Rockin' Writers and Radio-Free Asilomar
  - Dave Hampton, Sounds Amazing!: Is Success the Worst that Can Happen?
  - John Wharton, Applications Research: Taming El Palo Gonzo: *Son et Lumiere sans Son*
- 10:45pm: Wednesday Night at the Movies**
- Eric Enderton, Industrial Light and Magic: Special-Effects Graphics Revisited
  - [Additional videotape shorts to be determined]

(\* R.A.T. = Reformed Asilomar Time)

## Thursday, April 22 (12/31/99 R.A.T.)

### 8:15am: Hardware Trends — Ken Shoemaker, Intel, Chair

- John Wharton, Applications Research: Microprocessor Philosophy Closes the Loop
- Earl Killian, Tensilica: How Extensible Processors Can Change System Design
- Ken Shoemaker, Intel Corp.: A Few More Bits About Merced

### 10:00am: Open Source: Revenge of the Gnurds — Christine Peterson, Foresight Institute, Chair

- Brian Behlendorf, Apache Group: An Overview of the Open Source Development Model
- L. Peter Deutsch, Aladdin Enterprises: Open Software Licensing Beyond the OSD: Incenting a Diverse Developer Community
- Mark S. Miller, E Project: E: A Secure Distributed Programming Language for Writing Capability-Based Smart Contracts
- Open Source Strategy Panel: John Walker will join Chris, Brian, Peter, and Mark to discuss and debate – with each other and the audience – the future of Open Source, Linux, MP3, etc.

### 12:00pm: Lunch

### 1:30pm: Cyberparanoia — Marianne Mueller, Sun Microsystems, Chair

- Matthew Kaufman, Tycho Networks: The Pentium III Serialization Hysteria
- Ian Goldberg, UC Berkeley: Using the Internet Pseudonymously
- Bill Cheswick, Lucent-Bell Labs: *Enemy of the State*: How Close Are We?

### 3:30pm: Toys “R” µS — Bruce R. Koball, Motion West, Chair

- Ron Milner, Applied Design Labs: The Toy Design Process: Are We at a Cusp?
- Dave Hampton, Sounds Amazing!: From Furball to Furby
- Allan Alcorn, Zowie Intertainment: Toymaking Challenges

### 5:00pm: Reception and Dinner

### 7:00pm: Off in the Ozone — John Wharton, Applications Research, Chair

- Gary Hudson, Rotary Rocket Company: Rotary Rocket Roton Progress Report

### 7:40pm: Open Discussion: A *Rich* Asilomar Tradition — Mary Eisenhart, YOYOW, RAT Patrol

(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

### 12:00m:

*Virtual Y2K's Eve Party!!!*



## **Friday, April 23 (1/1/00 R.A.T.)**

- 8:30am: Consumer Networks — Bob Wedig, Wedig Consulting, Chair**
- Sam Wood, Modern Systems Research, Inc.: IP Telephony: Paradigm Shift or Fad?
  - Joe Decuir, Microsoft: A Home Networking Technologies Tour
  - John McClain, Sun Microsystems, Inc.: The Jini™ Architecture: Changing the Rules of the Network
- 10:30am: Technology Futures: The Next 25 Years — John Markoff, The New York Times, Moderator**
- Bill Cheswick
  - Lee Felsenstein
  - Stan Mazor
  - Nick Tredennick
  - John Walker
- 11:45am: Conference Wrap-Up and Closing Remarks**
- 12:30pm: Outdoor Barbecue Lunch (weather permitting)**
- 2:00pm: Conference Adjourns**

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### **Program Committee**

Brian Berg	Bruce Koball	Fred Terman
Fred Clegg	Mark Laubach	Bob Wedig
Mary Eisenhart	Stan Mazor	John Wharton
Dewayne Hendricks	Marianne Mueller	Pierluigi Zappacosta
	Ken Shoemaker	

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# The Twenty-Sixth Asilomar Microcomputer Workshop

April 26 – 28, 2000

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## Wednesday, April 26

**1:30pm Opening Remarks** – Brian Berg, *Berg Software Design*, General Chair  
John Wharton, *Applications Research*, Program Chair

**1:45pm Technology Vehicles: Land, Sea, Air, and Space** – John Wharton, Chair

- Java on Wheels  
Owen Densmore, *Sun Microsystems*
- Performance Optimization in Modern Yacht Racing  
Stan Honey, *Sportvision Inc.*
- Military Applications of Micro Air Vehicles  
Nick Tredennick, *TechNerds International*
- Roton ATV Flight-Test Video  
Gary Hudson (*in absentia*), *Rotary Rocket Company*

**3:00pm Break**

**3:30pm System Insecurity** – Marianne Mueller, *Sun Microsystems*, Chair

- Secrets  
Eugene Miya, *NASA Ames Research Center*
- Restructuring DNS Around Social Principles  
Eric Hughes, *Independent*
- How to Take the Internet Down for Several Days  
Bill Cheswick, *Lucent Technologies*

**5:00pm Reception and Dinner**

**7:30pm Athematic Short Talks** – Bob Wedig, *Wedig Consulting*, Chair

- The State of the Art in Internet Measurement  
kc claffy, *UCSD-CAIDA*
- Wiring Tonga: From the Ground Up and the Sky Down  
Dewayne Hendricks, *Dandin Group*
- Mi SETI@casa != Su SETI@casa  
Mark Laubach, *Inconvenient Networks*
- Video Topology  
Tamara Munzner, *Stanford University*
- How the Yellow First-Down Line Works  
Stan Honey, *Sportvision Inc.*
- PowerTrip: Perspectives on PowerPC  
Pete Wilson, *Motorola*
- Lessons of Antitrust: A Case Study  
Steve McGeady, *Intel Corp.*

**10:30pm Wednesday Night Videos** – Bruce Koball, *Motion West*, Veejay

## Thursday, April 27

- 8:30am New-Age Servers and Search Engines** – Mark Laubach, *Inconvenient Networks*, Chair
- Scaling Ultraseek Server from Small Sites to Medium-Sized Countries  
Walter Underwood, *GO.com, The Walt Disney Company*
  - Google System Architecture  
David desJardins, *UC Berkeley and Google*

**9:45am Break**

- 10:15am Pocket-Sized Platforms** – Bob Wedig, *Wedig Consulting*, Chair
- Connecting the Physical World with the Virtual World of Computer Systems  
Roy Want, *Xerox PARC*
  - Itsy Pocket Computer  
Bill Hamburg, *Compaq Western Research Lab*
  - The Matchbox PC  
Vaughn Pratt, *Stanford University*

**11:45am Lunch**

- 1:15pm Metaprocessors and Software Deconstruction** – John Wharton, *Applications Research*, Chair
- HotSpot Technology  
David Stoutamire, *Sun Java Software*
  - VMware's Virtual x86 Platform.  
Mendel Rosenblum, *VMware Inc.*
  - The Transmeta Code Morphing Software System  
Dave Ditzel, *Transmeta Corp.*

**2:45pm Break**

- 3:15pm Wireless Technology Update** – Dewayne Hendricks, *Dandin Group*, Chair
- Home Networks: A Case Study of a Dysfunctional Industry  
Debby Hindus, *Interval Research*
  - Mobile Telephony in Europe.  
Henri Slettenhaar, *Swiss Silicon Valley Association*
  - Will End-to-End Protocols Survive?  
Phil Karn, *Qualcomm*

**4:40pm A Debate on the Future of Bluetooth**

- **For:** Mike Cheponis, *California Wireless*
- **Against:** Dewayne Hendricks, *Dandin Group*

**5:00pm Reception and Dinner**

- 7:15pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 28

**5:30am Pre-Dawn Viewing of Planetary Conjunction**

*(Self-organized; attendance optional.)*

**8:00am Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corp.*, Chair

- Adventures in Silicon  
David Wyland, *Cradle Technologies*
- Overview of the AMD K8 "Sledgehammer"  
John Sell, *Advanced Micro Devices*
- Evolution in Architecture, from 21164 to the 21464  
Allan Baum, *Compaq*
- Crusoe Processor Core Design Features  
Dave Ditzel, *Transmeta Corp.*

**10:00am Break**

**10:30am Engineering for the Long Run** – Brian Berg, *Berg Software Design*, Chair

- Permanent Web Publishing  
David S.H. Rosenthal, *Sun Microsystems*
- The Rosetta Disk Project  
Jim Mason, *The Long Now Foundation*

**11:30am Conference Wrap-Up and Closing Remarks**

**12:00n Outdoor Barbecue Lunch** (weather permitting...)

**1:15pm The Use of Technology to Enforce Responsible Behavior** – David S.H. Rosenthal, *Sun Microsystems*, Moderator

(Group and panel discussion involving selected Workshop attendees; details and panel composition to be announced.)

**2:30pm Conference Adjourns**

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### Program Committee

Brian Berg	Mark Laubach	Henri Slettenhaar
Fred Clegg	Stan Mazor	Fred Terman
Mary Eisenhart	Marianne Mueller	Bob Wedig
Dewayne Hendricks	David S.H. Rosenthal	John Wharton
Bruce Koball	Ken Shoemaker	Pierluigi Zappacosta

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# THE TWENTY-SEVENTH ASILOMAR MICROCOMPUTER WORKSHOP

# 2001: a tech odyssey

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**Wednesday, April 25**

- 1:30pm Opening Remarks** – Mark Laubach, *Inconvenient Networks*, General Chair  
John Wharton, *Applications Research*, Program Chair
- 1:45pm Space Odysseys** – John Wharton, *Applications Research*, Chair
- Rotary Rocket: The Last Revolution  
Gary Hudson, *HMX Inc.*
  - Space-Based Global De-Warming –or– Anti-Venuforming Terra  
Robert Kennedy, *The Ultimax Group*
  - Running Mir to Ground  
John Wharton, *Applications Research*
- 3:00pm Break**
- 3:30pm Extreme Engineering** – Stan Mazor, *Numerical Technologies Inc.*, Chair
- Pogoing Palm Bots  
Illah Nourbakhsh, *Carnegie –Mellon University*
  - On-Chip Turbans and Pumps –or– MEMS Are Made of This  
Nick Tredennick, *Gilder Publishing*
  - Squeezing a Ton of Chickens in a Half-Ton Truck –or– How Was That Masked, Man? – Stan Mazor, *Numerical Technologies Inc.*
- 5:00pm Reception and Dinner**
- 7:30pm Athematic Short Talks Part I** – Bob Wedig, *Wedig Consulting*, Time Keeper
- The Permanent Email Server Initiative  
Kurt Bollacker, *Long Now Foundation*
  - Data Immortality: How to Save Everybody's Data Forever for Almost Nothing.  
Memory is Free, Eternally! – John Walker, *Fourmilab*
  - From My Living Room to Intel in 24 Years  
Bert Forbes, *Intel Corp. – Retired*
  - Seeing the Fourth Dimension  
Rudy Rucker, *San Jose State University*
- 8:45pm Break and Space Station Fly-Over** (details in note below committee list on page 3)
- 9:15pm Athematic Short Talks Part II** – Bob Wedig, *Wedig Consulting*, Time Keeper
- Putting the Squeeze on Web Bandwidth Costs  
Lu Abel, *dotRocket*
  - Bringing Socially Beneficial Technology into the Service of Humanity  
Jim Fruchterman, *The Benetech Initiative*
  - Defending the Public Interest: The UnFair Use of Standards  
Shari Steele, *Electronic Frontier Foundation*

## Wednesday, April 25 (cont.)

**10:15pm** **Wednesday Night at the Movies: 2001: A Space Odyssey** – Bruce Koball, *MotionWest*, Projectionist

## Thursday, April 26

**8:00am:** **High Tech Art** – Brian Berg, *Berg Software Design*, Arts Supporter

- Applying Artificial Life: Computers as Collaborating Artists  
Aaron Wolf Baum, *Algorithmic Artist*
- G-7 Stock Puppets  
William Pietri, *Bianca/Scissor*; and Jim Mason, *Long Now Foundation*
- Internet Visualizations: '1:1' and 'Mapping the Web Infome'  
Lisa Jevbratt, *San Jose State University/C5*

**9:45pm** **Break**

**10:15am** **How to Fix an Internet Election** – Marianne Mueller, *Sun Microsystems*, Chad Counter

- Why Computers Shouldn't Count Votes  
Rebecca Mercuri, *Notable Software, Inc.*
- Problems with Internet Voting in Public Elections: David Jefferson, *Compaq Systems Research Center*; also with the *California Task Force on Internet Voting*
- Voting is an End-to-End System Problem!  
Peter Neumann, *SRI International Computer Science Lab*

**12:00n** **Lunch**

**1:30pm** **20,000,000 Transistors Under the Sea** – Bruce Koball, *MotionWest*, Skipper

- The Northern Elephant Seal: Back from the Brink  
Guy Oliver, *The Oceanic Society*
- Instrumentation of Deep-Diving Marine Mammals  
Brent Wright, *Independent Consultant*:
- The Environmental Sample Processor (ESP): An Embedded System for Remote Detection of Microorganisms in the Environment  
Chris Scholin, *MBARI (Monterey Bay Aquarium Research Institute)*

**3:00pm** **Break**

**3:30pm** **Graphics and Visualization** – Tamara Munzner, *Compaq SRC*, Alpha Sprite

- VNOS, a Visual Network Operating System  
Mark Lacas, *Lone Wolf Technologies*
- DVI and Lightning-2: Letting Graphics Out of the Box  
Gordon Stoll, *Intel Corp.*
- The Digital Michelangelo Project  
Marc Levoy, *Stanford University*

**5:00pm** **Reception and Dinner**

**7:15pm** **Open Discussion: A Rich Asilomar Tradition:** Mary Eisenhart, *YOYOW*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 27

- 8:15am Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corp.*, Chair
- Why the Itanium Processor Architecture is the Greatest Thing Since Sliced Bread  
Kevin Rudd, *Intel Corp.*
  - The Piranha Eight-Way CMP Processor Architecture  
Luiz André Barroso, *Compaq WRL*
- 9:30pm Break**
- 10:00am Where Eagles Dare: Spectrum Policy & Wireless Technology in Indian Country** –  
Dewayne Hendricks, *Dandin Group*, Chair
- Cultural Issues  
Steve Dupuis, *Salish Kootenai College*
  - Legal Issues  
Lawrence Lessig, *Stanford Law School*
  - Technology Issues  
Dewayne Hendricks, *Dandin Group*
- 11:30am Closing Remarks**
- 12:00n Outdoor Barbecue Lunch** (weather permitting)
- 1:15pm Panel Session: Where Did HAL Go Wrong?**  
(Group discussion involving selected Workshop attendees; details and panel composition to be announced)
- 2:30pm Conference Adjourns**

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### Program Committee

Brian Berg	Mark Laubach	Ken Shoemaker
Fred Clegg	Stan Mazor	Fred Terman
Mary Eisenhart	Marianne Mueller	Bob Wedig
Dewayne Hendricks	Tamara Munzner	John Wharton
Bruce Koball	David S.H. Rosenthal	Pierluigi Zappacosta

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Note on Space Shuttle/ISS Fly-Over: Weather permitting, Space Shuttle Endeavour and the International Space Station should be visible briefly (one minute or less) at 9:07pm on Wednesday, April 25. Look to the due south-west, approx. 10° above the horizon. Information on optimal viewing sites will be provided Wednesday evening.

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# The Twenty-Eighth Asilomar Microcomputer Workshop

April 24 – 26, 2002

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## Wednesday, April 24

- 1:30pm Opening Remarks** – Mary Eisenhart, *YOYOW*, General Chair  
John Wharton, *Applications Research*, Program Chair
- 1:45pm Digital Rights and Abuses** – Dewayne Hendricks, *Dandin Group*, Chair
- The Digital Rights Management Dark Age  
Seth David Schoen, *EFF*
  - Perspectives on the Napster Litigation  
A.J. "Nick" Nichols, *Probitas Corp.*
  - Are the Tools the Rules? The Future of the Digital Commons  
Dewayne Hendricks, *Dandin Group*
- 3:10pm Break**
- 3:30pm Broadband for the Last Mile** – Brian Berg, *Berg Software Design*, Chair
- The Bandwidth Imperative: Why We Need It, How We Can Get It  
Mark Heyer, *HeyerTech*
  - Is Fiber Optics the Broadband Solution for the Home and SOHO?  
Bob Stillman, *RAS Consulting*
  - There's Lots of Effective Bandwidth Available If You Know How to Use It  
Gene Kan, *Sun Microsystems*
- 5:00pm Reception and Dinner**
- 7:30pm Thematic Short Talks** – Bob Wedig, *Wedig Consulting*, Time Keeper
- Observations from the Beginnings of the Internet  
Dave Walden, *Internet Pioneer*
  - Better Living Through Fiber  
David S.H. Rosenthal, *Sun Microsystems Labs*
  - GNU Radio: A Free-Software Defined Radio  
Eric Blossom, *Blossom Research*
  - Movers and Shakers in Artificial Muscle Technology  
Robert Horst, *HT Consulting*
  - The Budapest Manifesto  
Vicky Reich, *Stanford University Libraries*
  - Digital Rights  
Gene Kan, *Sun Microsystems*
  - Actual Interfaces  
Tom Jennings, *World Power Systems*
  - Byzantium 550AD  
Paulina Borsook
- 11:00pm Wednesday Night at the Movies** – Bruce Koball, *MotionWest*, Projectionist



## Thursday, April 25

**8:15am Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corp.*, Chair

- The Death of Scaliarity  
Mitch Alsup, *AMD*
- Computer Architecture 2000–2025: A Retrospective  
Andy Glew, *Intel Corp.*
- Dealing with the Soaring Challenges of Lithography Masks  
Stan Mazor, *Numerical Technologies, Inc.*

**10:00am Break**

**10:30am Growing the Global Village** – Michelle Aden, *Sun Microsystems*, Chair

- Packets from Across the Digital Divide  
Jon Katz, *Cornell University*
- Metadata Standards: A Foundation for Future Ecological Asset Value  
Bill Coleman, *Electric Power Research Institute*
- Energy Sources for High-Performance Electric Vehicles  
Rex Dawson, *Automotive Concepts & Technology, Inc.*

**12:00n Lunch**

**1:30pm Sensors: Low-Cost, High-Impact** – Tamara Munzner, *Compaq Systems Research Center*, Chair

- Ultrasonic Detection of Broken Rail  
Ken Schwartz, *Bay Area Rapid Transit R&D*
- Sensors and Networks at Home  
Bill Cheswick, *Lumeta Corp.*
- Vision for the Robotic Masses  
Illah Nourbakhsh, *The Robotics Institute, Carnegie-Mellon University*
- Slamming Pressure Sensors into Mars  
Kurth Reynolds, *Synaptics*

**3:15pm Break**

**3:45pm Managing Technologists, Herding Cats** – Stan Mazor, *Numerical Technologies, Inc.*, Chair

- Managing Creativity: The Development of Technical Individuals and Teams  
Dave Walden
- Management Credibility: What Technologists Need vs. What They're Getting  
John V. Levy, *John Levy Consulting, LLC*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A Rich Asilomar Tradition:** Mary Eisenhart, *YOYOW*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 26

**5:30am Pre-Dawn Comet Watch**

*(Self-organized; attendance optional.)*

**8:15am Homeland Insecurity** – Pierluigi Zappacosta, *Digital Persona non-grata*, Chair

- Biometrics Applications, System Design, and Performance Evaluation  
Salil Prabhakar, *Digital Persona*
- Biometrics Testing and Standards  
Jim Wayman, *San Jose State University*
- We Know Where You Are: 3D Visual Person Tracking  
John Woodfill, *Tyzx, Inc.*

**10:00am Break**

**10:30am H-P Wars, High-Tech Mergers, and other Board Room Shenanigans** – Ted Laliotis, *Laliotis & Associates*, Moderator

Panel session (remarks followed by discussion). Panelists to include:

- Ted Laliotis, *Laliotis & Associates*
- Jason Pontin, *The Red Herring*
- Regis McKenna, *The McKenna Group*

**11:45am Conference Wrap-Up and Closing Remarks**

**12:15pm Outdoor Barbecue Lunch** (weather permitting)

**2:00pm Conference Adjourns**

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### Program Committee

Michelle Aden	Bruce Koball	Ken Shoemaker
Brian A. Berg	Stan Mazor	Fred Terman
Fred Clegg	Tamara Munzner	Bob Wedig
Mary Eisenhart	Tim Pozar	John Wharton
Dewayne Hendricks	David S.H. Rosenthal	Pierluigi Zappacosta

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*Additional thanks to Mike Cheponis for arranging Radio KaFKA; to Janet Guns for administrative support; and to Ted Laliotis for organizing and moderating the Friday-morning panel discussion.*

Note to sidewalk stargazers: Weather permitting, this year brings two astronomical phenomena of note. A rare quintuple planetary conjunction will be visible Wednesday and Thursday evenings, with Mercury low in the western sky at twilight, and Venus, Mars, Saturn, and Jupiter forming a line arcing to the south. Also, Comet Ikeya-Zhang may be visible in the hours before dawn Thursday and Friday mornings. Look to the north, between the constellations Cygnus and Cassiopeia.

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# The Twenty-Ninth Asilomar Microcomputer Workshop

April 23 – 25, 2003

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## Wednesday, April 23

- 1:30pm** **Opening Remarks** – Mary Eisenhart, *YOYOW*, General Chair  
John Wharton, *Applications Research*, Program Chair
- 1:45pm** **RFID: Overview, Technology, and Use** – Owen Densmore, *ComplexityWorkshop*, Chair
- RFID Overview  
Owen Densmore, *ComplexityWorkshop*
  - RFID Technology  
Stephen Smith, *U.C. Berkeley and Alien Technologies*
  - RFID Consumer Applications  
Robert Sloan, *Syngensis*
- 3:00pm** **Break**
- 3:30pm** **Wireless in the Tall and Uncut** – Dewayne Hendricks, *Dandin Group*, Chair
- So What's the FCC Done to Us Lately?  
Dewayne Hendricks, *Dandin Group*
  - The Pedal-Powered Internet  
Lee Felsenstein, *Golemic, Inc.*
  - Wireless in Remote Areas  
Dave Hughes, *Old Colorado City Communications*
- 5:00pm** **Reception and Dinner**
- 7:30pm** **Thematic Short Talks** – Bob Wedig, *Wedig Consulting*, Time Keeper
- BARWN: An Experiment in MAN Deployment of Licensed Exempt Radios for Multiple Use – Tim Pozar, *Bay Area Research Wireless Network*
  - An Idiosyncratic Introduction to Bioinformatics  
Howard Cohen, *Cohen Software Consulting, Inc.*
  - ADAM: A Decentralized Abstract Machine  
Andrew "Bunnie" Huang, *Xenatera Partners*
  - The Politics of Spam  
Gary Kremen, *Grant Media LLC*
  - Introducing a Patented Client/Server, Java-based, Interactive, Competitive Knowledge Game on the Web – Pete Antoniak, *EdUGames*
  - Simulating Real Intranets with Honeyd  
Bill Cheswick, *Lumeta*
  - Building an Intelligent Home with VNOs  
Ophir Ronen, *Singlestep Technologies*
  - What if Bugs in Your Software Could Result in Torture and Killing?  
Tom Rolander, *Benetech*
- 10:30pm** **Wednesday Night Videos** – Bruce Koball, *Motion West*, VeeJay

## Thursday, April 24

**8:00am Free Access to Literature** – Brian Berg, *Berg Software Design*, Chair

- What is Open Access?  
Peter Suber, *Earlham College*
- Open Access: Unlocking the Value of Research  
Rick Johnson, *The Scholarly Publishing & Academic Resources Coalition*
- What is a Library Anymore, Anyway?  
Vicky Reich, *Stanford University*
- The Internet Bookmobile  
Ashley Rindsberg, *Internet Archive*

**10:00am Break**

**10:30am Network Security: Are We Prepared for Today's Realities?** – Michelle Aden, *Sun Microsystems*, Chair

- Curious Yellow: The First Coordinated Worm Design  
Brandon Wiley, *The Foundation for Decentralized Research*
- Linux FreeS/WAN: Open Source Security for the Rest of Us  
Hugh Daniel, *The FreeS/WAN Project*
- Cybersecurity in the New World Order  
Rebecca Bace, *Trident Capital*

**12:00n Lunch**

**1:30pm Separating the Spam from the Eggs and Bacon** – Bob Wedig, *Wedig Consulting*, Chair

- Habeas: Trespassers Will be Prosecuted  
Anne Mitchell, *Habeas.Com*
- Next Generation Spam Fighting Techniques  
Karl Jacob, *Cloudmark*
- Five Hundred Billion Scanned: Designing a Large-Scale Anti-Spam Filter  
Art Medler, *Brightmail*

**3:00pm Break**

**3:30pm Future Shock: The Changing Shape of Things to Come** – Tim Pozar, *Late Night Software*, Chair

- The Future of the Past: The Real History of Moore's Law  
John Markoff, *The New York Times*
- The Future Sucks: Innovation and Conformity in a Microsoft World  
Douglas Crockford, *Faceless Corporation*
- Utopia Appropriated: The Future as it Never Was  
Rick Prelinger, *The Prelinger Archives*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

## Friday, April 25

**5:30am Pre-Dawn Beach Walk**

*(Self-organized; attendance optional.)*

**8:00am Making the Most of Modern Microprocessors** – Ken Shoemaker, *Intel Corp.*, Chair

- Feedback-Directed Optimization Strategies for Open-Source Compilers and Software Development – Robert Myers, *Rustuck.Com*
- Design and Experience: Using the Intel Itanium 2 Processor Performance Monitoring Unit to Implement Feedback Optimizations  
Kevin Rudd, *Intel Corp.*
- Tales of Optimizing Algorithms for Modern Microprocessors  
Terje Mathisen, *Hydro*
- Modern Graphic Processor Architectures  
Steve Purcell, *nVidia*

**10:00am Break**

**10:30am Panel discussion: "It's Hard to Make Predictions — Especially About the Future"** – Tim Pozar, *Late Night Software*, Chair

Panel moderated by:

- John Markoff, *The New York Times*

Panel members to include:

- Douglas Crockford, *Faceless Corporation*
- Rick Prelinger, *The Prelinger Archives*
- Paul Saffo, *Institute for the Future*

**11:45am Conference Wrap-Up and Closing Remarks**

**12:15pm Outdoor Barbecue Lunch** (weather permitting)

**2:00pm Conference Adjourns**

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### Program Committee

Michelle Aden	Dewayne Hendricks	Ken Shoemaker
Brian A. Berg	Bruce Koball	Fred Terman
Fred Clegg	Stan Mazor	Bob Wedig
Mary Eisenhart	Tim Pozar	John Wharton
Janet Guns	David S.H. Rosenthal	Pierluigi Zappacosta

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*Additional thanks to Mike Cheponis for providing back-up hardware support for Radio Baghdad; to Janet Guns for administrative assistance; to Owen Densmore for arranging the opening session; to John Markoff for arranging and moderating the panel discussion; and to Walter Colon for jumping through hoops to arrange the high-speed internet link.*

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# **The Thirtieth Asilomar Microcomputer Workshop**

## **April 28 – 30, 2004**

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Wednesday, April 28

**1:30pm Opening Remarks** – Mary Eisenhart, *YOYOW*, General Chair

**1:45 pm Virtual Communities** – Mary Eisenhart, *YOYOW*, Chair

- Hunting Cool: The relationship of community to what's "cool" in computer-mediated communication

Matthew McClure, *Pinnacle Systems*

- The FreeBSD Operating-System Community: A self-organizing open source project

Kirk McKusick, *FreeBSD*

- The Network Is the Game: Social trends in mobile communities

A.J. Kim, *SocialDesigner.net*

**2:45pm Break**

**3:15pm Inspiring (and Funding) Innovation** — Dewayne Hendricks, *Dandin Group*, Chair

- Angel Investing

Charlie Hobbs, *Hobbs Associates, Inc.*

- What's Getting Funded - and Why

Dave Newman, *Charles River Ventures*

- Very Ambitious Projects

Christine Peterson, *Foresight Institute*

- The DARPA Grand Challenge

John Nagle, *Team Overbot*

**5:00pm Reception and Dinner**

**7:30pm What Were We Thinking? The Founders Speak**

- Fred Clegg, *San Jose State University*

- Fred Coury, *Retired*

- Ted Laliotis, *Laliotis & Associates*

- Fred Terman, *Naval Postgraduate School*

**8:30 pm Break**

**8:45 pm Athematic Short Talks** – Bob Wedig, *Wedig Consulting*, Time Keeper

- Scalable Visual Comparison of Biological Trees and Sequences  
Tamara Munzner, *UBC Department of Computer Science*
- Software Synthesis for Embedded Systems  
Bob Zeidman, *Zeidman Technologies*
- Five Ways to Ruin a Development Project  
John Levy, *John Levy Consulting*
- The California Recall — What the election data really showed  
Rebecca Mercuri, *Kennedy School of Government, Harvard University*
- SpamNet - Social democracy vs. spam  
Vipul Ved Prakash, *Cloudmark, Inc.*,
- The Early Days  
Stan Mazor, *Retired*

**11:00 pm Wednesday Night Videos** – Bruce Koball, *Motion West*, VeeJay

Thursday, April 28

**8:30 Portable Technology: How It Has Changed Society, Influenced Culture, and Redefined the Workplace** – Anne P. Mitchell, Esq., *Institute for Spam and Internet Public Policy*, Chair

- Portable Technology: The good thing is, everything's always with you. The bad thing is, everything's always with you  
Dori Smith, Author, *Mac OS X Unwired: A Guide for Home, Office, and the Road*
- Where's Dolly Parton When You Need Her? The death of 9-5  
Frederick Lane III, *SexBizLaw.com*
- Inviting James Bond Into Your Office: Coping with the gadgets from Q's lab that seem to be everywhere  
David Shier, *Shier Systems and Software*

**10:00am Break**

**10:20 am Preserving the Past, Passing the Torch** — Michelle Aden, *Sun Microsystems*, Chair

- Science Museum Exhibits – My attempt to make a Nobel Prize winner  
Bill Cheswick, *Lumeta*
- MyLifeBits  
Gordon Bell, *Microsoft Bay Area Research Center*
- Software Collection Project at the Computer History Museum  
Bernard Peuto, *Concord Consulting*

**12:00 noon Lunch**

**1:30pm Run-DMCA: Raising Hell** – Brian Berg, *Berg Software Design*, Chair

- DMCA: Tougher Than Leather  
Zack Higgins, *Morrison & Foerster*
- What Are the Merits of the DMCA?  
Scott Frewing, *Baker & McKenzie*
- Why All Engineers Should Be Afraid of the DMCA  
Korbin Van Dyke, *PatentVentures*

**3:00pm Break**

**3:20pm Blasts From the Past** – Brian Berg, *Berg Software Design*, Chair

- Memory Is Free  
Jack Grimes, *Consultant*
- Battlebots  
Philip Freidin, *Fliptronics*
- Gary Went Flying  
Tom Rolander, *ExtraCap, Inc.*
- The Birth of Furby  
Dave Hampton, *Sounds Amazing!*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*,  
RAT Patrol

(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart any time after registration to secure your time slot, first-come first-assigned.)

Friday, April 30

**5:30am Pre-Dawn Beach Walk**

(Self-organized; attendance optional)

**8:30am Motes, Microprocessors and Beyond** – Ken Shoemaker, Intel Corp., Chair

- Intel Mote and Sensor Networks  
Ralph Kling, *Intel*
- The "Design Gap": How we're in danger of succeeding our way over a cliff  
Simon Young, *Nassda*
- The Ubiquitous Dust Motes: Wireless sensor networks for the masses  
Mike Cheponis, *California Wireless*

**10:00am Break**



## **10:20 am Quick Takes: Asilomar's Impact on Past Attendees - Panel Discussion —**

Brian Berg, *Berg Software Design*, Chair

- Asilomar Keeps Popping Up!  
Owen and Dede Densmore, *Complexity Workshop*
- Exploiting the AMW Network to Build Your Startup Team  
Richard Ross, *Berkeley TeleMedia*
- Heading Deep into the Heart of Silicon Valley  
Debby Hindus, *Rapport, Inc.*
- Asilomar Changed My Life, or It's All Your Fault  
Brian Kelly, *BKMS*
- It's Not Only What You Know, It's Who You Know Who Knows You  
Mike Cheponis, *California Wireless*

## **11:20am It's Payback Time**

Nick Nichols, *Probitas Corporation*

## **11:40am Wrap-Up and Closing Remarks**

## **12:15pm Outdoor Barbecue Lunch (weather permitting)**

## **2:00pm Conference Adjourns**

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### **Program Committee**

Michelle Aden	Bruce Koball	David S. H. Rosenthal
Brian A. Berg	Stan Mazor	Ken Shoemaker
Fred Clegg	Anne P. Mitchell	Fred Terman
Mary Eisenhart	Tamara Munzner	Bob Wedig
Janet Guns	Tim Pozar	John Wharton
Dewayne Hendricks		Pierluigi Zappacosta

The program committee would especially like to thank Mike Cheponis and Dave Hampton for their contributions to this year's Workshop.

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# The Thirty-First Asilomar Microcomputer Workshop

April 20 – 22, 2005

(Motto: *Never Trust a Computer Workshop Over 30!*)

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## Wednesday, April 20

- 1:30pm** **Opening Remarks** – Mary Eisenhart, *YOYOW*, General Chair  
John Wharton, *Applications Research*, Program Chair
- 1:45pm** **RFID Risks** – Marianne Mueller, *Stanford University*, Chair
- RFID Applications Overview and Update  
Marianne Mueller, *Stanford University*
  - Cracking RFID Security  
Steve Bono, *Johns Hopkins University*
  - RFID From the Washington Perspective  
William Lane, *FCC, Office of Engineering and Technology*
- 3:00pm** **Break**
- 3:30pm** **The Machinery of Electronic Voting** – Michelle Aden, *Sun Microsystems*, Chair
- Pushing Forward: Voting System Standards  
Rebecca Mercuri, *Harvard University*
  - Voting the Voters Can Trust  
Karl Auerbach, *InterWorking Labs*
  - Electronic Voting Challenges ... and the State of Fear  
Neil McClure, *Hart InterCivic, Inc.*
- 5:00pm** **Reception and Dinner**
- 7:30pm** **Thematic Short Talks** – Bob Wedig, *Wedig Consulting*, Time Keeper
- Making Interval Arithmetic Fast Yet Cheap  
Nicholas Wilt, *NVIDIA*
  - Steerable, Progressive Multidimensional Scaling  
Tamara Munzner, *University of British Columbia*
  - Intelligently Speaking  
Dave Hampton, *Sounds Amazing!*
  - Roam Home to a Dome: Bucky Fuller in Carbondale  
Dewayne Hendricks, *Dandin Group*
  - Moore's Wall  
Nick Tredennick, *Noted Industry Contrarian*
  - End-to-End, Again: The Fall and Rise of "P2P"  
Matthew Kaufman, *amicima*
  - What Really Happened Between Hollywood and ReplayTV?  
Andrew Wolfe, *Wolfe Consulting*
  - Internet Telephony and the Confrontation with Regulation  
Rob Dorfman, *EarthLink*
- 11:00pm** **Munchies and Late Night Videos!** – Bruce Koball, *MotionWest*, VeeJay

## Thursday, April 21

**8:15am** **Microprocessors ... and Moore!** – Ken Shoemaker, *Intel Corporation*, Chair

- 3-D Wafer Stacking  
Ken Shoemaker, *Intel Corporation*
- The Cell Processor: Outside the Membrane Looking In  
Bob Wedig, *Wedig Consulting*
- The Niagara CPU  
Allan Strong, *Sun Microsystems*
- Full-Function Miniature Computers  
Craig Hughes, *Gumstix*

**10:15am** **Break**

**10:45am** **Adventures in the Blogosphere** – Mary Eisenhart, *YOYOW*, Chair

- Blogs, Feeds & Podcasting: Distributed Media Of, By, and For the People!  
Eric Case, *Google, Inc.*
- Mike's Manic Minutes  
Michael Lehman, *Microsoft Corporation*

**11:45am** **Lunch**

**1:30pm** **New Horizons in Media Distribution** – Tim Pozar, *Late Night Software*, Chair

- The New Economics of Content Distribution  
Tim Pozar, *Late Night Software*
- Accessing Broadcast Archives  
Jeff Ubois, *UC Berkeley*
- MythTV: Building a Home HDTV PVR  
Bill Cheswick, *Lumeta Corporation*

**3:00pm** **Break**

**3:30pm** **PCs Gone Wild!** – Anne Mitchell, *ISIPP*, Chair

- The Missing No-Tech Spam-Fighting Component  
Danny Goodman, *Author*
- Project HoneyPot: A Distributed Web-Hosted Spider Trap  
Matthew Prince, *Unspam Technologies Inc.*

**Ain't Nothing Like the Real Thing: Email Authentication** – *Panel Discussion*

- Anne Mitchell, *ISIPP*, Moderator

Panel members to include:

- Eric P. Allman, *Sendmail, Inc.*
- Dave Rossetti, *Cisco Systems Inc.*
- Meng Wong, *SPF, EarthLink*

**5:00pm** **Reception and Dinner**

**7:20pm** **Innovators, Past and Future** – Harold Evans, *Author and Historian*, Speaker

**8:00pm** **Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol

(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot, first-come first-assigned.)

## Friday, April 22

**5:30am Pre-Dawn Snipe Hunt**

*(Self-organized; attendance optional. Try not to step on the nests.)*

**8:00am “Every Place an Electron Spins, the FCC Regulates”: Governmental Roles in Regulating Technology** – Dewayne Hendricks, *Dandin Group*, Chair

- FCC: A View from Six Years As A Technical Advisor  
Dewayne Hendricks, *FCC Technological Advisory Council*
- FCC: An Inside View  
William Lane, *FCC, Office of Engineering and Technology*
- Freedom to Connect  
David Isenberg, *isen.com*
- Regulated Standards Considered Harmful  
Brad Templeton, *Electronic Frontier Foundation*

**10:00am Break**

**10:20am Barriers to Innovation** – *Panel and Open Group Discussion*

- Nick Tredennick, *Gilder Technology Report*, Moderator

Panel members to include:

- Bill Cheswick, *Lumeta Corp.*
- Rob Dorfman, *EarthLink*
- Wendy Seltzer, *EFF -and- Berkman Center for Internet & Society*  
(Additional panel members to be announced)

**11:45am Closing Remarks** – Mary Eisenhart, *YOYOW*, General Chair

**12:15pm Outdoor Barbecue Lunch (weather permitting)**

**1:45pm Conference Adjourns**

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### Program Committee

Michelle Aden  
Brian A. Berg  
Bill Cheswick  
Fred Clegg  
Mary Eisenhart  
Janet Guns

Dewayne Hendricks  
Bruce Koball  
Stan Mazor  
Anne Mitchell  
Marianne Mueller  
Tamara Munzner  
Tim Pozar

David S.H. Rosenthal  
Ken Shoemaker  
Fred Terman  
Bob Wedig  
John Wharton  
Pierluigi Zappacosta

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*The Program Committee would especially like to thank Janet Guns for her great assistance and tremendous patience in helping coordinate this year's Workshop.*

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# The Thirty-Second Asilomar Microcomputer Workshop

April 19–21, 2006

(Motto: “Who’d’a ever thought we’d overflow five bits?!?”)

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## Wednesday, April 19

- 1:30pm Opening Remarks** – Anne Mitchell, *ISIPP*, General Chair  
John Wharton, *Applications Research*, Program Chair  
David Rosenthal, *Stanford University*, Connectivity Czar
- 1:45pm System Adaptation and Intelligent Design** – John Wharton, *Applications Research*, Chair
- Sam Wood, Modern Systems Research, Inc.: *The Internet Stroger Switch: Packet Routing for Bell-Heads*
  - Dave Hylands, Broadcom: *Hobbyist Robotics*
- 2:45pm Break**
- 3:15pm Sensors and Transducers** – Tim Pozar, *Late Night Software*, Chair
- David Josephson, Josephson Engineering: *A Sound-Pressure Tensor Transducer*
  - Jano Banks, Radiient Technologies, Inc.: *Wireless Audio You’d Actually Want to Listen To*
  - Marc LeBrun, Adozu, Inc.: *An Application of Active RFID to Real-Time Location Systems*
- 4:45pm Reception and Dinner**
- 7:30pm Athematic Short Talks** – John Wharton, *Applications Research*, Timekeeper  
[Assorted 20-minute talks. Speaking order subject to minor tweaks.]
- Mike Cheponis, California Wireless, Inc.: *Adventures in Random Global Synchronicity*
  - Christine Peterson, Foresight Nanotech Institute: *How the Patent System is Screwing Up Nanotechnology*
  - Nancy Blachman, Google Guide: *The Joys and Frustrations of Google*
  - John Markoff, The New York Times: *Hookah-Smoking Caterpillars*
  - Bernard Peuto, Concord Consulting: *How to Take Care of Your Own History: The Open Collecting Movement and Its Impact on Collecting Institutions*
  - Michael Levy, Prediction Marketing, Inc.: *Three Definitions of Luck*
  - Dave Hampton, SoundsAmazing: *How Systems Learn*
- 10:30pm Munchies and Late Night Videos!** – Bruce Koball, *Motion West*, Digital VeeJay

## Thursday, April 20

### 8:30am Health Care Technology – Brian Berg, *Berg Software Design*, Chair

- Bob Horst, Tibion Corporation: *Bionic Actuators*
- Tom Rolander, Amobian Technologies: *An Engineer Approaches Home Health Care*
- Robert Sloan, Philips Applied Technologies: *Mobile Medical Monitoring*

### 10:00am Break

### 10:30am Eponymous Microprocessor Session – Ken Shoemaker, *Intel Corp.*, Chair

- Ken Shoemaker, Intel Corp.: *What's Really Inside Your Cell Phone?*
- Andrew Singer, Rapport, Inc.: *Kilocore™: A 256-Element Parallel-Processing System That Runs on Half a Watt*
- Stan Mazor, Retired: *Flashback: The Intel 4005 4-Bit Microprocessor*

### 11:45am Lunch

### 1:30pm HouseWareZ – Craig Hughes, *Gumstix*, Chair

- Craig Hughes, Gumstix: *Home LAN Security*
- David S.H. Rosenthal, Stanford University: *Linux for Grannies*
- Mark Lacas, Max Home: *Energy and Lifestyle Management*

### 2:45pm Break

### 3:15pm Candy From Strangers – Marianne Mueller, *Stanford University*, Chair

- Mark Seiden, Consultant: *The Many Flavors of Malware* – Moderator
- John Goldman, Lexar: *USB Storage Insecurity and Warm Blankets*
- Luis Villa, Beckman Center for Internet and Society: *Network Security: How We Might Solve It Ourselves, so the Lawyers Don't Try to Solve It Themselves*
- John Markoff, The New York Times: *How Anti-Virus Companies are Scaring the Pants Off PC Users*

### 5:00pm Reception and Dinner

### 7:30pm Open Discussion: A Rich Asilomar Tradition – Mary Eisenhart, *YOYOW*, RAT Patrol

(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot, first-come first-assigned.)

## Friday, April 21

**5:30am Pre-Dawn Ark Races – Row 'em yourself!!!**

(Self-organizing; attendance optional. BYOA)

**8:30am Patent Abuse: Intimidation and Domination Through Patent Litigation – Anne Mitchell, ISIPP, Chair**

- Jerry Klein, The Chatham Group: *“PTO” Doesn't Have to Stand for the “Pirates and Trolls Office”*
- Zack Higgins, Kirkland & Ellis LLP: *Oh, the Patent Games People Play*
- Subroto Bose, Orrick, Herrington & Sutcliffe: *Pay No Attention to the Troll Beneath that Bridge!*

**10:00am Break**

**10:30am Whither Goeth the Net?** Panel and group discussion and on the future of Internet governance, neutrality, business models, defenses against preëmptive attack, etc.

- Bill Cheswick, *Lumeta* – Moderator
- Panel members to include:
- Eric Allman, *Sendmail, Inc.*
  - Robert Chew, *Chew and Chew Partners*
  - Michael Fischer, *Santa Clara University*
  - David Newman, *Recovering V.C./Consultant*

**11:45am Closing Remarks – Anne Mitchell, ISIPP, General Chairman**

**12:15pm Outdoor Barbecue Lunch** (weather permitting)

**1:30pm Conference Adjourns**

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### Program Committee

Michelle Aden		David S.H. Rosenthal
Brian A. Berg	Craig Hughes	Ken Shoemaker
Bill Cheswick	Bruce Koball	Fred Terman
Fred Clegg	Stan Mazor	Qarin Van Brink
Mary Eisenhart	Anne Mitchell	Bob Wedig
Janet Guns	Marianne Mueller	John Wharton
Dewayne Hendricks	Tim Pozar	Pierluigi Zappacosta

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*The Program Committee would especially like to thank Janet Guns for her great assistance and tremendous patience in helping coordinate this year's Workshop.*

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# The Thirty-Third Asilomar Microcomputer Workshop

April 18–20, 2007

(Motto: *Best. Multi-Radix-Palindrome Year. Ever! †*)

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## Wednesday, April 18

- 1:30pm**    **Opening Remarks** – Anne Mitchell, *ISIPP*, General Chair
- AMW: One Billion Seconds and Counting – Brian Berg, *Berg Software Design*
- 1:45pm**    **Processor Design: Lessons of the Fall** – Stan Mazor, *Retired*, Chair
- The Symbol High-Level Language Computer: A Failure of Fairchild R&D  
Stan Mazor, *Retired*
  - Recent Failures in Microprocessors  
Andy Glew, *Intel Corporation*
- 2:45pm**    **Break**
- 3:15pm**    **AI: The Next Generation** – Stan Mazor, *Retired*, Chair
- ADUMIS: Annotating Data Using Minimally Invasive Structure  
Conrad Barski, M.D., *Software Developer*
  - Facial Recognition  
Kazunori Okada, *San Francisco State University*
  - Hierarchical Temporal Memory -or- Why Can't a Computer Be More Like a Brain?  
Dileep George, *Numenta*
- 5:00pm**    **Reception and Dinner**
- 7:30pm**    **Athematic Short Talks** – Bob Wedig, *Wedig Consulting*, Time Keeper
- New-Kid Hacker Culture: Teaching the Young How to Make Things  
Tom Jennings, *World Power Systems*
  - Cultural Technical Practice of Harnessing a Real-Time Massive Online Community  
Marvin Park, *University of California Irvine*
  - TAA: Technically Advanced Aircraft, the Bonanza G36  
Dave Hampton, *Sounds Amazing! Design*
  - An Ultrafast Optical Digital Technology: Smart Light  
Alan Huang, *Terabit Corporation*
  - My House, Live On the Internet  
Mark Lacas, *MaxHome*
  - Design Process for Low-Cost Toys  
Jeri Ellsworth, *Self-Taught Electrical Engineer*
  - Making Peace Between Viacom and YouTube: Sharing Videos with  
Invisible Commercials  
Bob Zeidman, *Zeidman Consulting*
  - Filling the Vacuum Microsoft is About to Create  
Chuck McManis, *Google, Inc.*
- 10:30pm**    **Post-Athematic: The Next Generation** – Bruce Koball, *Motion West*, Producer



## Thursday, April 19

### 8:30am Storage: Heroic Technology Racing After Exploding Demand

Brian Berg, *Berg Software Design*, Chair

- A Brief History of Storage: ‘How’ Chasing ‘What’ and ‘Why’ -or- What Is All That Stuff, and What Do You Intend To Do With It?  
Leonard Laub, *Keryston Associates, Inc.*
- Consumer Storage is ‘Mass’ Storage  
Tom Coughlin, *Coughlin Associates, Inc.*
- Storage on the Lunatic Fringe  
Tom Ruwart, *Sherwood Information Partners, Inc.*

### 10:00am Break

### 10:30am Eponymous Microprocessor Session – Ken Shoemaker, *Intel Corporation*, Chair

- Intel Architecture Processor Technology: Not Your Father’s Sliced Bread  
Kevin Rudd, *Intel Corporation*
- CUDA: A New Model for Computation on the GPU  
Nicholas Wilt, *nVidia Corporation*
- Audio Signal Processing: From Valves to VLSI  
Patrick Warrington, *Calrec Audio, Ltd.*

### 12:00pm Lunch

### 1:30pm Data Mining – Marianne Mueller, *Gardener*, Chair

- Sloan Digital Sky Survey  
George Fekete, *Johns Hopkins University*
- How I Might Spend \$50MM of Black Money at the NSA  
Bill Cheswick, *AT&T*
- “Nurse, This is Mr. Cheswick”: Mining Public Sources for Private Information  
Ellen Cousins, *Primos Research*

### 3:00pm Break

### 3:30pm Aerospace: Around, Above and Beyond – Dewayne Hendricks, *Tetherless Access*, Chair

- Federal Space Policy and FAA Guidelines for Space Travel  
Dewayne Hendricks, *Tetherless Access*
- Webcams From Space  
Rick Voreck, *Space Systems/Loral*
- How’s Your Suntan Coming? Dyson Dots Revisited  
Robert G. Kennedy III, *The Ultimax Group, Inc.*
- Saving the World: A Holistic Approach to Pragmatic Geo-Engineering  
John Wharton, *Applications Research*

### 5:00pm Reception and Dinner

### 7:30pm Open Discussion: A Rich Asilomar Tradition – Mary Eisenhart, *YOYOW*, RAT Patrol

(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot, *first-come first-assigned.*)

## Friday, April 20

### 5:30am Pre-Dawn Aston-Martin Speedboat Races

(Self-organizing; attendance optional. Bring your own mini JetCopter. And a license to hack.)

### 8:15am Ad-Hoc Wireless – Craig Hughes, *Gumstix*, Chair

- Big Sur WISP  
Ken Shoemaker, *Intel Corporation*
- USRP: Universal Software Radio Peripheral  
Matt Ettus, *Ettus Research, LLP*
- Why You Want Your Own Cellphone  
Matt Hamrick, *Silicon Valley Homebrew Cellphone Club*

### 9:45am Break

### 10:15am Interesting People Doing Interesting Things in Interesting Places

Michelle Aden, *Sun Microsystems, Inc.*, Chair

- Mohenjo Daro: When Engineers Ruled  
Christine Cockey, *Mistral Mountain*
- Pushing Peas Uphill: Complexity, Culture, and Corruption  
Jane Sargent, M.D., *University of Massachusetts Memorial Medical Center*
- Structural Changes and Their Impact on Startups  
Dave Newman, *Independent Director/VC*

### 11:45am Closing Remarks – Anne Mitchell, *ISIPP*, General Chair

### 12:15pm Outdoor Barbecue Lunch (weather permitting)

### 1:30pm Workshop Adjourns

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### Program Committee

Michelle Aden	Dewayne Hendricks	David S.H. Rosenthal
Brian A. Berg	Craig Hughes	Ken Shoemaker
Bill Cheswick	Bruce Koball	Fred Terman
Fred Clegg	Stan Mazor	Bob Wedig
Mary Eisenhart	Anne Mitchell	John Wharton
Janet Guns	Marianne Mueller	Pierluigi Zappacosta
	Tim Pozar	

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† Note that: 33 in decimal = 33. 33 in binary = 100001. 2007 in hex = 7D7.  
*Let's all wave a big hello to Charles Simonyi on our way to the dining hall!*  
*Reentry is scheduled for Friday morning, Pacific time. Godspeed, Charles.*

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# The Thirty-Fourth Asilomar Microcomputer Workshop

April 16–18, 2008

(Motto: *It's the Year of the RAT!*)

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## Wednesday, April 16

**1:30pm** **Opening Remarks** – Marianne Mueller, *Gardener Communications*, General Chair  
John Wharton, *Applications Research*, Program Chair  
Fred Terman, *Naval Postgraduate School*, Arrangements Czar

**1:45pm** **Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corporation*, Chair

- Restructuring the x86 Microarchitecture to Improve Power Efficiency  
Ken Shoemaker, *Intel Corporation*
- The Intel Nehalem Processor Architecture  
Kevin Rudd, *Intel Corporation*
- Computers and Cities  
Forrest Warthman, *Warthman Associates*

**3:00pm** **Break**

**3:30pm** **How Green is Our (Silicon) Valley?** – Brian Berg, *Berg Software Design*, Chair

- Reflections on the Solar Market: An Overview of Commercial Solar Energy  
Chip Krauskopf, *Entrepreneur*
- Solar Energy @ HOME: Using Pattern Analysis on the Urban Landscape  
Yiyi Miao, *San Francisco State University*
- Making Cents of Solar: Some Reasoning Behind the Solar Craze  
Miguel Gomez, *ActSolar*

**5:00pm** **Reception and Dinner**

**7:20pm** **Athematic Short Talks**<sup>†</sup> – Bob Wedig, *Wedig Consulting*, Time Keeper

- How Color Vision Works: Everything They Taught Us at School Was Wrong!  
Clive “Max” Maxfield, *Techbites Interactive*
- The 700 MHz Spectrum Auctions: Much Ado About Nothing!  
Dwayne Hendricks, *Tetherless Access, Inc.*
- Open-Source Physical Security: A Third Way?  
Christine Peterson, *Foresight Nanotech Institute*
- Naughty Bits: Has the Adult Online Industry Learned Anything From  
Mainstream Silicon Valley?  
Matt Peterson, *Meta Interfaces*
- How to Document Software History  
Bernard Peuto, *Concord Consulting*
- How MySpace Has Forever Changed MeatSpace  
Clayton Stark, *Flock, Inc.*
- The EvoGrid: An Artificial Life Experimental Cyberspace  
Bruce Damer, *Biota.org*
- Where Robot Cars May Actually Take Us  
Brad Templeton, *Electronic Frontier Foundation*

**10:45pm** **Optional Unstructured Après-Athematic Non-Session** – Bruce Koball, *Motion West*, Non-Chair

## Thursday, April 17

**8:15am Alternative Energy Technology** – Bill Cheswick, *AT&T Research*, Chair

- Re-Assessing the Energy Crisis and Future Energy Resources  
Robert Cousins, *Cousins Research*
- Doing the Splits: Looking Ahead in Nuclear Reactors  
Christine Cockey, *Mistral Mountain*
- Farming Microalgae: From Photons to Fuel  
Guido Radaelli, *Aurora Biofuel*

**10:00am Break**

**10:30am Internet I: ( :- ( ?** – Dewayne Hendricks, *Tetherless Access, Inc.*, Chair

- After the Last IPv4 Address  
Matthew Kaufman, *Adobe Systems Inc. / Gatedspeed Broadband*
- A Perfect Storm: The Impending Internet Melt-Down  
Tim Pozar, *Late Night Software*
- The Internet Identity Crisis: What Does Identity Mean Online?  
Eric Allman, *Sendmail, Inc.*

**12:00pm Lunch**

**1:30pm Sea Tech: Voyager** – Christine Peterson, *Foresight Nanotech Institute*, Chair

- The World in 25 Feet: Over the Roads, Through the Canals and Across the Oceans in an Aluminum Tug Yacht  
Charles Vollum, *Boojum*
- An Autonomous Solar-Powered Boat – Architecture & Design (Re)Considerations  
Mark Moulding, *MARKE Systems, Inc.*
- Out of the Box: The Role of Ignorance in the Creation of a New Species  
Ugo Conti, *Marine Advanced Research, Inc.*

**3:00pm Break**

**3:30pm Internet II: ( :- ) !** – Tim Pozar, *Late Night Software* & Marianne Mueller, *Gardener Communications*, Co-chairs

- Customer-Driven Network Hardware Reliability  
David Hsiao, *Cisco Systems, Inc.*
- Combating eFraud and Internet Abuse  
Rick Wesson, *Support Intelligence, LLC*
- Why Networks Still Suck: Rearchitecting Systems to Promote Innovation  
Martin Casado, *Stanford University*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *Mary Eisenhart Editorial Services* & Craig Hughes, *Pro Se*, Tag-Team RAT Patrols;  
Bruce Koball, *Motion West*, Resident A/V Wizard

( Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot. *First-come first-assigned!* )

## Friday, April 18

- 5:30am Pre-dawn briefing of Ariane Range Safety Officer volunteers<sup>††</sup>**  
( Self-organizing; attendance optional. )
- 8:15am The AMW Great Debate on Network Neutrality** – Dewayne Hendricks, *Tetherless Access, Inc.*, Moderator  
Position statements and panel discussion. Panelists to include:
- Bill Cheswick, *AT&T Research*
  - Matthew Kaufman, *Adobe Systems Inc. / Gatespeed Broadband*
  - Brad Templeton, *Electronic Frontier Foundation*
  - (additional panelist(s) to be announced)
- 9:30am Break**
- 10:00am The Technology of Aging** – Pierluigi Zappacosta, *Sierra Sciences*, Chair
- Deciphering the Genetics of Human Aging  
Michael West, *BioTime Inc.*
  - Prospects for Truly Defeating Aging  
Aubrey de Grey, *The Methuselah Foundation*
- Panel discussion and Q&A moderated by Pierluigi; above speakers to be joined by:
- Mark Muhlestein, *Aging Homo Sapiens*
  - Christine Peterson, *Foresight Nanotech Institute*
- 11:45am Closing Remarks** – Marianne Mueller, *Gardener Communications*, General Chair
- 12:15pm Outdoor Barbecue Lunch (weather permitting)**
- 1:45pm Workshop Adjourns**

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### Program Committee

Michelle Aden		Tim Pozar
Brian A. Berg	Craig Hughes	David S.H. Rosenthal
Bill Cheswick	Bruce Koball	Ken Shoemaker
Fred Clegg	Stan Mazor	Fred Terman
Mary Eisenhart	Anne Mitchell	Bob Wedig
Janet Guns	Marianne Mueller	John Wharton
Dewayne Hendricks	Christine Peterson	Pierluigi Zappacosta

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<sup>†</sup> The International Space Station will make an overflight at 8:15pm Wednesday evening, briefly passing from right to left approximately 12° above the southwestern horizon.

<sup>††</sup> Vandenberg AFB has agreed to launch a spare Ariane missile Friday for the amusement of this year's attendees. Viewing details will be announced as they become known.

This program printed on recycled algae.

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# The Thirty-Fifth Asilomar Microcomputer Workshop

April 15 – 17, 2009

(Motto: *Flat is the New UP!*)

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## Wednesday, April 15

- 1:30pm** **Opening Remarks** – Marianne Mueller, General Chair  
John Wharton, *Applications Research*, Program Chair  
Fred Terman, *Naval Postgraduate School*, Arrangements Czar
- 1:45pm** **Back to the Future!** – John Wharton, *Applications Research*, Chair
- Sea Cruise: A Galaxy 19 Launch-Mission Travelogue<sup>†</sup>  
Rick Voreck, *Space Systems/Loral*
  - The EvoGrid: Ratcheting Up Complexity Toward an Artificial Origin of Life Event  
Bruce Damer, *Biota.org* -and- *Institute for Advanced Study*
  - Where *Else* May Robot Cars Actually Take Us?  
Brad Templeton, *Electronic Frontier Foundation*
- 3:00pm** **Break**
- 3:30pm** **Digital Cinema: The Long Road** – Brian Berg, *Berg Software Design*, Chair
- Digital Cinema: Who, What, and Why  
Bill Elswick, *Entertainment Technology Associates, Inc.*
  - Mastering and Distribution: From Film to Digital  
John Hurst, *CineCert LLP*
  - Digital Cinema: Content Security and 3D  
Pierre-Anthony Lemieux, *Consultant*  
*Panel Q&A with Bill, John, and Pierre-Anthony*
- 5:00pm** **Reception and Dinner**
- 7:30pm** **Athematic Short Talks** – Bob Wedig, *Wedig Consulting, Inc.*, Time Keeper
- Engineering a Bio-Robotic Knee Orthosis: Testing Patience and Testing Patients  
Bob Horst, *Tibion Corporation*
  - An Unclassified Look at the GiG and the Future of Government Networks  
Bill Cheswick, *AT&T Labs-Research*
  - Hooking Up the Farallons: Wireless is For the Birds!  
Tim Pozar, *Late Night Software*
  - Resurrecting an Ampex FR-900 Tape Drive to Retrieve Lost Lunar Imagery  
Dennis Wingo, *Skycorp Incorporated*
  - Jean Hoerni and the Planar Process  
Christophe Lecuyer, *University of California*
  - Lost in a (Computing) Cloud: The Joys of Flying Blind  
Joel Williams, *emLinux*
  - A Personal Epiphany on Green and Alternative Transportation Systems  
Dwayne Hendricks, *Tetherless Access*
  - Twill Wicked: Some Crazy Ideas for a New Kind of Car  
Chris Tacklind, *Twill Tech Inc.*
  - Star Trek: Boldly Going Where No Mac Had Gone Before  
Tom Rolander, *CrossLoop, Incorporated*
- 11:00pm** **Happy Hour**

## Thursday, April 16

**8:15am System Generations: Microcomputers Past, Present, and Future** – Ken Shoemaker, *Intel Corporation*, Chair

- What's New in Microprocessors – As I See It  
Ken Shoemaker, *Intel Corporation*
- Apollo 11: The Computer Inside®  
Dennis Wingo, *Skycorp Incorporated*
- An Old Supercomputer Guy Looks at Modern Graphics Processors and Other Problems That Just Won't Go Away  
Andy Glew, *Intel Corporation*
- Parimics' Parallel Processing Chipset: 20 TeraOps and 1000 GFLOPS for Machine Vision Applications  
Axel Kloth, *Parimics Inc. R&D*

**10:00am Break**

**10:30am Inverting the Grid** – Dewayne Hendricks, *Tetherless Access, Inc.*, Chair

- Augmenting the Smart Grid with Ad Hoc Sensors and Ambient Intelligence  
Warren Stringer, *μSenti*
- Power To Plug In: Making Consumer Power Sources as Easy to Install as an Electric Dryer  
Kee Nethery, *Kagi*
- The Rush to Clean Power: How *Not* to Produce Green Energy  
David Newman, *Former CEO of a Green Energy Start-Up*

**12:00n Lunch**

**1:30pm Cybernetic Anthropology** – Mary Eisenhart, *Mary Eisenhart Editorial Services*, Chair

- Magical Thinking in Consumer Relationships With Their Data  
Cathy Marshall, *Microsoft Research*
- Creating Markets and Capturing Network Value with P2P File Sharing  
Andrew Orłowski, *The Register*
- An Expanded Role for Test-Driven Development: The Eclipse Foundation "Swim" Experience  
Ward Cunningham, *AboutUs.org*

**3:00pm Break**

**3:30pm Censorship and Surveillance on the Internet** – Marianne Mueller, Chair

- Nation-State Routing: Censorship, Wiretapping and BGP  
Josh Karlin, *University of New Mexico*
- Concept Doppler: Global Internet Censorship, and What We Can Do About It  
Jed Crandall, *University of New Mexico*
- Interception, Traceback, and Jurisdictional Arbitrage in the Age of High-Availability Network Service Architectures  
Bill Woodcock, *Packet Clearing House*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A *Rich* Asilomar Tradition** – Mary Eisenhart, *Mary Eisenhart Editorial Services* & Craig Hughes, *Pro Se*, Tag-Team RAT Patrols;  
Bruce Koball, *Motion West*, Resident A/V Wizard

( Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot. *First-come first-assigned!* )

## Friday, April 17

**5:30am Pre-dawn comet search, satellite tracking, and UFO watch**

( Self-organizing; attendance optional. )

**8:30am Multiple Views and Alternative Ways of Seeing** – Tamara Munzner, *University of British Columbia*, Chair

- Biology is Destiny: Of Graphs and Genes  
Tamara Munzner, *University of British Columbia*
- Mixed Reality and the Chocolate Factory  
Maribeth Back, *FX Palo Alto Laboratory*
- Why One is Always The Wrong Number  
Jim Gettys, *X.org*

**10:00am Break**

**10:30am WWED? (What Would Engelbart Do?)** – Panel Discussion and Debate.  
Bill Cheswick, *AT&T Labs-Research*, Moderator

*Panel discussion, audience comments, and Q&A. Panelists to include:*

- Ward Cunningham, *AboutUs.org*
- Jim Gettys, *X.org*
- Kirk McKusick, *Author and FreeBSD Committer*
- Andrew Orłowski, *The Register*

**11:45am Closing Remarks** – Marianne Mueller, General Chair

**12:15pm Outdoor Barbecue Lunch** (weather permitting)

**1:45pm Workshop Adjourns**

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### Program and Planning Committee

Michelle Aden		Tim Pozar
Brian A. Berg	Craig Hughes	David S.H. Rosenthal
Bill Cheswick	Bruce Koball	Ken Shoemaker
Fred Clegg	Stan Mazor	Fred Terman
Mary Eisenhart	Anne Mitchell	Bob Wedig
Janet Guns	Marianne Mueller	John Wharton
Dewayne Hendricks	Christine Peterson	Pierluigi Zappacosta

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† The *Sea Launch Commander* and *Odyssey* launch platform are on-station at the equator this week, preparing to launch a SICRAL 1B European communications and defense satellite. If the launch countdown begins while the Workshop is in progress we will attempt to patch a live video webcast into the AMW A/V system. Watch for further details.





## Thursday, April 29

- 8:30am Eponymous Microprocessor Session** – Ken Shoemaker, Intel Corp., *Chair*
- Karl Mathia, Zitech Engineering: *Robotics for Electronics Manufacturing: Past, Present, Future*
  - Art Stamness, DVApps, Inc.: *Logic Simulation with One Billion Gates: x86 Can't Do This!*
  - Axel Kloth, Parimics, Inc.: *Massively Parallel Packaging Trends*
- 10:00am Break**
- 10:30am Things That Go Bump In The Night: Guarding the Digital Castle** – Michelle Aden, *Chair*
- Greg Rose, Qualcomm, Inc.: *Stream Ciphers*
  - Anton Sabev, Intel Corp.: *Fifty Ways to Crack DRM*
  - Jim Hughes, Huawei Technologies Co., Ltd.: *Tamper Responsive Integrated Circuits*
  - Dan Kaminsky, IOActive: *Adventures in Computation*
- 12:00pm Lunch**
- 1:30pm Evolution of Publishing** – John Markoff, New York Times, *Chair*
- Mitchell Levy, Happy About, Inc.: *Quickly Demonstrating Thought Leadership*
  - Glen Campbell, Yahoo!: *Shakespeare Got To Get Paid: Fragmentation and Aggregation in the Publishing Industry*
  - John Markoff, New York Times: *Panel with a Cast of Thousands: David Rosenthal (Academic Publishing); Stan Mazor (Self-publishing); Mary Eisenhart (In the Trenches); Bill Cheswick (iPad to the Rescue); Marianne Mueller (Advertising Statistics); and others ...!*
- 3:30pm Break**
- 4:00pm Nukes Will Power the Planet ... Or Will They?** – Robert Kennedy, Ultimax, *Chair*
- Paul Monus, BPXA: *20 TW of Carbon Free Energy (Solar or Thorium) by 2025: Is a 2nd Manhattan Project Needed?*
  - Christine Cockey, Symbiotic Storage: *Space Reactors*
  - Robert Kennedy, The Ultimax Group, Inc.: *Launching Solar Energy Projects, Carbon Targets and Single Stream Recycling: Climate Change and the Oak Ridge City Council*
- 5:30pm Reception and Dinner**
- 7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, YOYOW, *RAT Patrol*  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot: first-come, first-assigned.)

## Friday, April 30

**5:30am Pre-Dawn ISS and Iridium flare watch** – (self-organizing; attendance optional)

- Check current position from iPad: [www.heavens-above.com](http://www.heavens-above.com)
- Gather at northwestern tide pools (*BTW BYO iPad*)

**8:30am Science of Green** – Lorette Cheswick, [cheswick.com](http://cheswick.com), *Chair*

- Marianne Mueller, [mrm consulting](http://mrmconsulting.com): *Science of Soil*
- Lorette Cheswick, [cheswick.com](http://cheswick.com): *Quantitative Tools for the Garden*
- Keith Lofstrom, *Server Sky: Put Grey Computing Things Into Orbit: Green Energy Isn't Green, But Space Energy Is*

**9:30am Break**

**10:00am Design is Dead – Long Live Design** – Brian A. Berg, Berg Software Design, *Chair*

- Andrew Cromarty, City Lights Network: *The Death of Product Design*
- John Feland, Stanford University:  
*Bill Joy Was Wrong: The Future Needs Us, Desperately, to Design It*
- Chuck House, Media X@Stanford: *Holistic Design: The Elusive Elixir*  
(*These talks will be followed by an interactive roundtable discussion.*)

**11:45pm Closing Remarks** – Marianne Mueller, *General Chair*

**12:15pm Lunch**

**1:45pm Workshop Adjourns**

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### Program Committee

Michelle Aden	Dewayne Hendricks	Tim Pozar
Brian A. Berg	Craig Hughes	David S.H. Rosenthal
Bill Cheswick	Bruce Koball	Ken Shoemaker
Fred Clegg	Stan Mazor	Fred Terman
Mary Eisenhart	Anne Mitchell	Bob Wedig
Janet Guns	Marianne Mueller	Pierluigi Zappacosta
	Christine Peterson	

[www.amw.org](http://www.amw.org)

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Special thanks to Etón Corp. ([www.etoncorp.com](http://www.etoncorp.com)) for special pricing on this year's hand-crank radio freebie, and special thanks to Michelle Aden for securing and AMWizing the freebies!

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# The Thirty-Seventh Asilomar Microcomputer Workshop

April 27-29, 2011

*(Motto: Where Has All the Hardware Gone?)*

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## Wednesday, April 27

**1:30pm** **Opening Remarks** – Marianne Mueller, *Gardener Communications*, General Chair

**1:45pm** **Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corporation*, Chair

- 3D Memory Interconnections  
Ken Shoemaker, *Intel Corporation*
- Hardware Support for Security: Are You Capable? Catch My DIFT?  
Andy Glew, *Intellectual Ventures*
- Abusing Digital Radio Chips  
Travis Goodspeed, *Radiant Machines* and *University of Pennsylvania*

**3:00pm** **Break**

**3:30pm** **Prototyping Ideas** – John Feland, *Argus Insights*, Chair

- Junk Prototyping  
Lora Oehlberg, *University of California, Berkeley*
- Prototyping People  
Cara Silver, *Bassett & Partners* and *Stanford University*
- Where is the Maker Movement Headed?  
Jim Newton, *TechShop*

**5:00pm** **Reception and Dinner**

**7:30pm** **Athematic Short Talks** – Bob Wedig, *Wedig Consulting, Inc.*, Chair

- Using Alice to Teach Programming to Eighth Graders  
Bob Wedig, *Wedig Consulting, Inc.*
- DanKam: The Curious Project of Correcting Color Blindness  
Dan Kaminsky, *DKH Inc.*
- Cryptographic Identification Using Bruno Latour's "Historicity of Things"  
Eric Hughes, *Lytix*
- The Fukushima Disaster – Behind the Curtains  
Chris Cockey, *Symbiotic Storage*
  
- iTeX on iPad: My Foray into Rejective C  
Bill Cheswick, *AT&T Shannon Labs*
- Gigabit Broadband on the Cheap (and What This Means for Network Neutrality)  
Tim Pozar, *Late Night Software*
- Social Networking Jumps the Shark  
Steve McGeady, *ShiftWise* and *Drumlin Holdings LLC*

## Thursday, April 28

### 8:15am Mobile Medical Electronics – Brian Berg, *Berg Software Design*, Chair

- Morphing Mobile Devices for Medical Uses  
Ram Dhurjaty, *Dhurjaty Electronics Consulting*
- Bluetooth Low Energy: Use the Internet of Things to Help Manage an Aging Population – Joe Decuir, *CSR plc*
- Can Robotic Therapy Rewire the Brain?  
Bob Horst, *Tibion Bionic Technologies*

### 9:45am Break

### 10:15am Big Data – Bob Wedig, *Wedig Consulting, Inc.*, Chair

- Using Storage Class Memory for Archives with DAWN, a Durable Array of Wimpy Nodes – Ian Adams, *University of California, Santa Cruz*
- I Do Not Think That File Contains What You Think It Contains  
Andrew Hume, *AT&T Labs – Research*
- Using Storage to Make Better Storage  
Chad Mitchell, *Seagate Technology*

### 11:45am Lunch

### 1:30pm New Age Security and Privacy – Marianne Mueller, *Gardener Communications*, Chair

- The Future of Information Security and Risk  
Becky Bace, *Infidel, Inc.*
- PIR-Tor: Combining Technologies to Improve the Privacy of Online Communications  
Ian Goldberg, *University of Waterloo*
- Fireside Chat: Measuring and Managing the Carnage of Network Insecurity  
Dan Kaminsky, *DKH Inc.*

### 3:00pm Break

### 3:30pm Keynote Presentation – Hummingbird: A Rotor Machine for the 21<sup>st</sup> Century

Whitfield Diffie, Chief Cryptographer, *Revere Security*  
Vice President for Information Security, *ICANN*  
Visiting Scholar, *Center for International Security and Cooperation,*  
*Stanford University*

### 4:15pm The Future of Networking – Tim Pozar, *Late Night Software*, Chair

- How the Internet Really Works From a Technical Perspective  
Paul Vixie, *Internet Systems Consortium*
- Project CCNx: Content-Centric Networking  
Van Jacobson, *Palo Alto Research Center*

### 5:15pm Reception and Dinner

### 7:30pm Open Discussion: A *Rich* Asilomar Tradition – Mary Eisenhart, *YOYOW*, RAT Patrol (Ten-minute presentations on any subject you choose. Contact Mary Eisenhart as soon as practical after registration to secure your time slot, randomly assigned.)

## Friday, April 29

- 5:30am Offshore Census of Radioactive Koi** (*Self-organizing; Bring your own snorkel†*)
- 8:15am Navigating Time and Space** – John Wharton, *Applications Research*, Chair
- Stan & Neville's Excellent Adventure: The Technology of Open Sea Racing  
John Wharton, *Applications Research* (with apologies and appreciation to Stan Honey, *Honey Navigation††*)
  - Team Frednet and the Google Lunar X-Prize Competition  
Michael Lehman, *DreamTimeStudioZ*
- 9:15am Break**
- 9:45am Buffer Bloat** – David S.H. Rosenthal, *Stanford University Libraries*, Chair
- Packet Queue Control through a Rose-Colored Lens  
Kathie Nichols, *Futurewei Center for Innovation*
  - Bufferbloat: Dark Buffers in the Internet  
Jim Gettys, *Bell Labs*
  - Finishing the Internet  
Dave Täht, *TekLibre*
- Open Issues** – Panel discussion and Q&A moderated by David S.H. Rosenthal  
*Above speakers to be joined by:*
- Van Jacobson, *Palo Alto Research Center*
  - Paul Vixie, *Internet Systems Consortium*
- 11:45am Closing Remarks** – Marianne Mueller, *Gardener Communications*, General Chair
- 12:15pm Outdoor Barbecue Lunch** (weather permitting)
- 1:45pm Workshop Adjourns**

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### Program Committee

Michelle Aden	Dewayne Hendricks	Tim Pozar
Brian A. Berg	Craig Hughes	David S.H. Rosenthal
Bill Cheswick	Dan Kaminsky	Ken Shoemaker
Fred Clegg	Bruce Koball	Fred Terman
Mary Eisenhart	Stan Mazor	Bob Wedig
John Feland	Anne Mitchell	John Wharton
Janet Guns	Marianne Mueller	Pierluigi Zappacosta
	Christine Peterson	

Congratulations to Stan Mazor, recipient of President Obama's 2010 National Medal of Technology and Innovation for his role in co-inventing the microcomputer.

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Notes: The ISS may be visible at 9:22pm Thursday, 11° above the northern horizon.  
The final launch of Space Shuttle Endeavor is scheduled for 12:47pm PDT Friday.

† Offshore Census Takers: If anyone sees Blinky, please invite him to the barbecue.

†† Stan Honey is in New Zealand this week preparing for the 2013 America's Cup.



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# The Thirty-Eighth Asilomar Microcomputer Workshop

April 25-27, 2012

*(Motto: The Robots Are Coming! The Robots Are Coming!)*

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## Wednesday, April 25

- 1:30pm** **Opening Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair
- 1:45pm** **Eponymous Michael Processor Session** – Ken Shoemaker, *Intel Corporation*, Chair
- Mobile Silicon  
Michael Perry, *FirmWorks*
  - A Short Perspective on GPU Computing  
Michael Shebanow, *nVidia*
  - Extreme Multicore: How Far Have We Really Come?  
Pete “St. Michael” Wilson, *Kiva Design*
- 3:00pm** **Break**
- 3:30pm** **New Frontiers in Media and Communications** – Bob Wedig, *Wedig Consulting, Inc.*, Chair
- Paradigms in Digital Animation Education  
Michael Z. Huber, *Cogswell College*
  - Deadlines, Self-Entitled Students, and Crazy Directors  
Josh Hodges, *Cogswell College*
  - Experimentation and Learning with Software, Wireless Technology, and Amateur Radio: The SDR Ham Sandwich  
James Miller, *FCC / Washington College of Law, American University*
- 5:00pm** **Reception and Dinner**
- 7:30pm** **Athematic Short Talks** – Bob Wedig, *Wedig Consulting, Inc.*, Timekeeper
- Will the *America Invents Act* Help or Hurt the Independent Inventor?  
Kim Rubin, *Patent Agent*
  - Bring In the Nerds: Fighting SOPA/PIPA on Capitol Hill  
Dan Kaminsky, *DKH, Inc.*
  - Growing Grammars: The Application of Bioinformatics and Genetic Programming to Structured Data Analysis  
Mikhail Davidov, *Leviathan Security Group*
  - How to Second-Guess Your Oncologist  
Allan Schiffman, *CommerceNet* †
  - Building a New Web-Scale Search Engine  
Greg Lindahl, *blekko*
  - Morphing Data Acquisition Systems into Tablets: Why Imitation May Not Be the Best Form of Flattery  
Ram Dhurjaty, *Dhurjaty Electronics Consulting, LLC.*
  - Is That an iPad in Your Pocket? – Rolling Out a Design for Flexible Displays  
Peter C. Salmon, *Sagalio, Inc.*
  - Fun With 3-D Printers!  
Sandy Clark, *University of Pennsylvania*

## Thursday, April 26

- 8:15am Storage, Today and Beyond** – Brian A. Berg, *Berg Software Design*, Chair
- After the Floods: The Fragility and Potential of the Digital Storage Supply Chain  
Tom Coughlin, *Coughlin Associates*
  - Economic Models of Long Term Data Storage  
David S.H. Rosenthal, *LOCKSS Program*
  - Solid State Storage and High-Performance Magnetic Drives in the Data Center  
Dave Anderson, *Seagate Technology*

**9:45am Break**

- 10:15am Systems & Security** – Dan Kaminsky, *DKH, Inc.*, Chair
- SOPA, Censorsweeper, and Other Deep-Tech Thoughts  
Dan Kaminsky, *DKH, Inc.*
  - High-Frequency Trading Security  
Adam Cecchetti, *Déjà Vu Security*
  - Being Devious: Using Uncertainty to Harden ATMs and Other Everyday Things  
Michael J.J. Tiffany
  - Why Special Agent Johnny *Still* Can't Encrypt: Vulnerabilities in the Project 25  
Radio Standard  
Sandy Clark, *University of Pennsylvania*

**12:00n Lunch**

- 1:30pm It's Not Rocket Science. Oh, Wait, Yes It Is!** – John Wharton, *Applications Research*, Chair
- Tossed in Space: User Interfaces for Extreme Conditions  
Bernard "Dov" Adelstein, *NASA Ames Research Center*
  - Infrastructure To Go: Terrestrial Applications of Space Technology  
Dennis Wingo, *Greentrail Energy*
  - A Match Made in Heaven: Automotive Technology for Rocketships  
Frank Zegler, *United Launch Alliance Corporation*

**3:00pm Break**

- 3:30pm Sea Changes: Oceangoing Robots and Self-Sailing Boats** –  
David S.H. Rosenthal, *LOCKSS Program*, Chair
- Robots and Water and Whales, Oh My! – Building a Fleet of Oceangoing Robots  
James Gosling, *Liquid Robotics*
  - The Road to Unmanned Surface Vessels  
Ugo Conti, *Marine Advanced Research*  
Isabella Conti, *Marine Advanced Research*
  - America's Cup Racing for Dummies: Stan Honey's Latest Video Magic ††  
John Wharton, *Applications Research* (introducing *LiveLine* video clips)

**5:00pm Reception and Dinner**

- 7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol  
(Ten-minute presentations on any subject you choose. Contact Mary Eisenhart after registration to secure your time slot, randomly assigned.)



## Friday, April 27

- 5:30am Pre-Dawn MacGuffin Hunt** (*Self-organizing; Follow your own MacGuffin*)
- 8:15am Harnessing Innovation: Remembering John McCarthy, Dennis Ritchie, and Steve Jobs** – Bill Cheswick, *Looking*, Coordinator  
(Visionaries are people, too. Friends and associates of John, Dennis, and Steve share personal stories of their work.)
- 8:45am Silicon for Brains: Neuromorphic Systems and Reconfigurable Pipelines** – Brian A. Berg, *Berg Software Design*, Chair
- Addressing the Semantic Gap in Neuromorphic Systems  
Atif Hashmi, *University of Wisconsin-Madison*
  - Experiences in Integrating the DySER Hardware Accelerator into OpenSPARC  
Karu Sankaralingam, *University of Wisconsin-Madison*
- 9:45am Break**
- 10:15am Inspiration? Necessity? Comfort? Ego? Greed? – What are the Real Mothers of Invention?** – Bill Cheswick, *Looking*, Moderator<sup>†††</sup>  
*Opening remarks and group discussion. Panel members to include:*
- Al Alcorn – *Pong*
  - Bob Frankston – *VisiCalc*
  - Dave Hampton – *Furby*
  - Stan Mazor – *Intel 4004*
- (Additional panel members to be announced)*
- 11:45am Closing Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair
- 12:15pm Outdoor Barbecue Lunch** (weather permitting)
- 1:45pm Workshop Adjourns**

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### Program Committee

Brian A. Berg	Craig Hughes	Tim Pozar
Bill Cheswick	Dan Kaminsky	David S.H. Rosenthal
Fred Clegg	Bruce Koball	Ken Shoemaker
Mary Eisenhart	Stan Mazor	Fred Terman
John Feland	Anne Mitchell	Bob Wedig
Janet Guns	Marianne Mueller	John Wharton
Dewayne Hendricks	Christine Peterson	Pierluigi Zappacosta

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Look for an Iridium flare of magnitude -8 at 9:39:15pm Wednesday, 46° above due east.

An ISS overflight may be visible at 8:56pm Thursday, 18° above the northern horizon.

<sup>†</sup> Special kudos to returning AMW veteran Allan Schiffman. In 1984, for AMW #10, Allan stepped in as General Chair and almost single-handedly saved the Workshop.

<sup>††</sup> Stan Honey sends his regrets; he's in Italy this week preparing for the America's Cup. Congratulations to Stan on his 3-D graphics technology being nominated for an Emmy.

<sup>†††</sup> 2012 marks the 40th anniversary of both Pong and early production shipments of the 4004, and 15 years since proto-Furby's debut in the demo room at AMW #23. Good work, guys.

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# The Thirty-Ninth Asilomar Microcomputer Workshop

April 24-26, 2013

*(Motto: Crowdsourcing microprocessors since 1975!)*

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## Wednesday, April 24

**1:30pm Opening Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*,  
General Chair

**1:45pm Eponymous Microprocessor Session** – Andy Glew, *MIPS Technologies*, Session Chair †

- Thirty Ops in One Blow: Three Cycles from Cache Line to Adder  
Ivan Godard, *Out of the Box Computing*
- What a Long Strange Trip It's Been  
Allen Baum, *9<sup>th</sup> Wave Technologies*
- "This time, for sure! Presto!" said Bullwinkle J. Moose: Fusing FPGAs and Processors  
Steve Leibson, *Xilinx, Inc.*

**3:15pm Break**

**3:45pm Low Power Innovations** – Brian A. Berg, *Berg Software Design*, Session Chair

- The IVRs Are Coming: Power Architectures for PCs 2015  
David Kanter, *Real World Tech*
- Malicious Marketing Malarky and the Truth about Ultra Low-Power Design  
Jack Ganssle, *The Ganssle Group*
- Long-Lived Leaf Nodes for the Internet of Things  
Joe Decuir, *CSR*

**5:15pm Welcome Reception and Dinner**

**7:30pm Athematic Short Talks** – Bill Cheswick, *University of Pennsylvania*, Timekeeper

- Self-Driving Cars  
Hy Murveit, *Google, Inc.*
- CXP: How to Write a Function the Hard Way  
Matthew Voss, *West Valley College* and Matthew Smith, *independent learning*
- Nuclear Notes  
Chris Cockey, *Mistral Mountain*
- Coming to Grips with the New First-Inventor-to-File Patent Law  
Bennett Smith, *PatentVentures*
  
- Inspiring Mathematics: Martin Gardner and Vi Hart  
Nancy Blachman, *Inspiring Math*
- Test Automation: Waking Up from the Nightmare of the  
787 Dreamliner Electrical Systems, David Shier, *Shier Systems*
- Smartest Phone in the Room: An Update from the Trenches of the Mobile Phone Wars  
John Feland, *Argus Insights*
- Russian Rocket Politics  
Rick Voreck, *Space Systems/Loral*

**10:20pm Wednesday RATS** – Bill Cheswick, *University of Pennsylvania*, Timekeeper

## Thursday, April 25

- 8:30am**      **“Secure the network, HAL.” “I’m sorry, Dan. I’m afraid I can’t do that.”**  
Dan Kaminsky, *DKH, Inc.*, Session Chair
- Lessons from Stuxnet  
Bill Cheswick, *University of Pennsylvania*
  - Rethinking High-Assurance Security from the Ground Up  
Peter Neumann, *SRI International*
  - Coping with Digital Herpes, or, Industrial Cyber-Insecurity  
Jon Steinhart, *Jonathon Steinhart Consulting, Inc.*
- 10:00am**      **Break**
- 10:30am**      **Clouds on the Horizon** – Brian A. Berg, *Berg Software Design*, Session Chair
- Transporter: Building a Secure and Private Peer-to-Peer File Sharing System  
Geoff Barrall, *Connected Data*
  - OpenStack: The Open Source Operating System for the Next-Generation Data Center, Chris Kemp, *Nebula*
  - RAMCloud: Low-Latency Data Center Storage  
Mendel Rosenblum, *Stanford University*
- 12:00n**      **Lunch**
- 1:30pm**      **FutureMed: Bacteria, Bugs, and Brains** – Marianne Mueller, *UCCE Master Gardeners of Santa Clara County*, Session Chair
- uBiome: Sequencing the Human Microbiome  
Jessica Richman, *uBiome/Oxford University*
  - The Smartphone Will See You Now: Harnessing Mobile Computing for Diagnosis in the Third World  
Raj Kulkarni, *Dengue Relief Foundation*
  - Saving Science, Starting with Neuroscience: A Project on Scientific Transparency  
Dave Cardinal, *Cardinal Photo*
- 3:00pm**      **Break**
- 3:30pm**      **The Robots Are Here! The Robots Are Here! But Have We Noticed?**  
John Markoff, *The New York Times*, Moderator ††
- Opening remarks and group discussion. Panel members to include:*
- Virgil Griffith – *California Institute of Technology*
  - Kurt Bollacker – *The Long Now Foundation*
- Additional panel members to be announced.*
- 5:00pm**      **Reception and Dinner**
- 7:30pm**      **Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol  
*Ten-minute presentations on any subject you choose. Contact Mary Eisenhart after registration to secure your time slot, randomly assigned.*

## Friday, April 26

- 5:30am** *Beach launch of cloud-navigating drones (Self-organizing; Bring your own drone)*
- 8:30am** **Crowd\*** – David Weekly, *Facebook*, Session Chair
- Crowdfunding and Distributing eBooks: Libraries and the Creative Commons  
Eric Hellman, *unglue.it*
  - Crowd-Driven Computer Vision  
Kathleen Tuite, *University of Washington*
- 9:30am** **Break**
- 10:00am** **CrowdCoin and Disruptive Currencies** – Tim Pozar, *Fandor*, Moderator  
*Opening remarks and group discussion. Panel members to include:*
- Dan Kaminsky – *DKH, Inc.*
  - Brad Templeton – *Electronic Frontier Foundation*
  - Virgil Griffith – *California Institute of Technology*
- Additional panel members to be announced.*
- 11:45am** **Closing Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair
- 12:15pm** **Outdoor Lunch** (weather permitting)
- 1:45pm** **Workshop Adjourns**
- 

### Program Committee

Brian A. Berg  
Bill Cheswick  
Sandy Clark  
Fred Clegg  
Mary Eisenhart  
John Feland

Janet Guns  
Dewayne Hendricks  
Dan Kaminsky  
Bruce Koball  
Stan Mazor  
Anne Mitchell  
Marianne Mueller

Tim Pozar  
David S.H. Rosenthal  
Ken Shoemaker  
Fred Terman  
David Weekly  
John Wharton

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Look for an Iridium flare of magnitude -7.1 at 8:21:17pm Wednesday, 34° above NNW.

Three ISS overflights may be visible: 9:02pm Wednesday, 28° above the northwest horizon, moving toward 34° above ESE (three minutes); 8:11pm Thursday, moving from 24° above due north to 11° above due east (four minutes); and 9:47pm Thursday, moving from 12° above due west to 19° above southwest (two minutes.)

This week NASA launched three CubeSats that use standard commercial smartphones to perform all computation, navigation, imaging, and communication functions.



† Special thanks to returning AMW veteran and Guest Chair Andy Glew for assembling the leadoff session on eponymous microprocessors.

†† Congratulations to John Markoff and the NYT staff writers who last week received the 2013 Pulitzer Prize in Explanatory Reporting.

*(And keep an eye out for rogue asteroids!)*

## **The Fortieth Annual Asilomar**

### **Microtechnology Workshop**

**2014.4.23-25**

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**2014.4.23/Wed**

**Opening Remarks - John Wharton**

#### **Fabrication Technology**

- *Retrospective: Early Silicon-Based Microprocessors - Chad Leland Mitchell*
- *Desktop Semiconductor Foundries - Barry Bronson*
- *Space-Based Manufacturing - Paul Monus*

#### **Design Issues**

- *How to Use 10 Billion Nohns in a Trie - John Ahlstrom*
- *VLSI: The Party's Over, Now the Real Engineering Begins - Wendy Peikes*
- *When Will AI Arrive? - Marie Sullivan*

#### **Mathematic Topics**

- *What the Joint US/Japan/Europe DRAM Factory Fire Means to You - Jeff Deutsch*
- *Coping with Gigabyte-Sized Application Programs - L. Charlie Hobbs*
- *Where Are the Robots? - Rudy Rucker*
- *The Use of Antioxidants to Rid Your Body of Nanomachines - Jeff Deutsch*

**2014.4.24/Thu**

#### **Microprocessors**

- *A Demonstration of the NexGen Super 86 Chip-Set - John Ahlstrom*
- *Will Intel's P14 be the End of the x86 Line? - Mike Uhler*
- *When Will RISC Take Off? - Jack Mills*

## **Hardware**

- *Electron Spin Control Techniques for High-Density Memories* – Barry Bronson
- *Spoofing the Clipper-12 Encryption Chip* – John Ahlstrom
- *Neural Nets and Computer Neuroses: Your System Doesn't Have a Bug, It Has an Attitude* – Wendy Peikes

## **Software**

- *Software and Other Interactive Psychological Phenomena* – John Stautner
- *The Object-Oriented COBOL-2015 Language Standard (Proposed)* – John Ahlstrom
- *Who Makes the Best Windows NT: Microsoft, Sun, Novell, IBM, or Nintendo?* – Wendy Peikes

## **Wetware**

- *Microprocessor-Based Disease and Germ Management* – Paul Monus
- *Will Genentech's New Microbe-Processors Put an End to the x86? Or Are They Too Buggy?* – Brian Kelly
- *When Organics Pass the Turing Test: Ethical, Practical, and Conceptual Implications* – John Ahlstrom

## **Open Discussion: A Rich Asilomar Tradition**

**2014.4.25/Fri**

## **Applications**

- *Using N-Dimensional Automata to Outguess the Stock Market* – Stu Bjornsson
- *Speech Recognition in the New Newton: Can It Be Trained to Your Voice?* – Mike Uhler
- *Green Software: Tools for Environmental Management* – Doug Cox

## **Business Issues**

- *How the Collapse of Microsoft Could Have Been Avoided* – Robert Johnson
- *Intel: Requiem for a Heavyweight* – Wendy Peikes
- *Can Bill Gates Be Stopped?* – Jim Rea

**Outdoor Barbeque Lunch (ozone hole permitting...)**

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# AMW40

## The 40th Asilomar Microcomputer Workshop

April 23-25, 2014

*Motto: Data has Always been Big – It's the Bits that have gotten Small †*

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### Wednesday, April 23

- 1:30pm** **Opening Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair  
John Wharton, *Applications Research*, Program Chair
- 1:45pm** **Hackers in Space! – Citizen Forays to the Final Frontier** – John Wharton, *Applications Research*, Session Chair
- Lessons Learned in Autonomous Aviation  
Maclen Marvit, *Intellectual Ventures*
  - Applying Mainstream Design Approaches to Spacecraft Communications  
Helen Lurie, *Bit Beam Technologies*
- 2:45pm** **Break**
- 3:15pm** **Eponymous Microprocessor Session: Hitting the Wall** – Ken Shoemaker, *Intel Corp.*,  
Session Chair
- A Short Update on 3D Memories  
Ken Shoemaker, *Intel Corporation*
  - Can Intel Again Dominate High-Volume Processor Markets?  
Brian Case, *a2z Development (aka Amazon.com)*
  - Ultrathin Wireless 3D Chip Stacking  
Dave Ditzel, *ThruChip Communications*
  - Being Dumb to Go Fast  
Greg Lindahl, *blekko, inc.*
- 4:45pm** **Lightning Round I** – Lee Felsenstein††, *Only, LLC*, Interrupt Controller
- 5:00pm** **Welcome Reception and Dinner**

**7:30pm** **Lightning Round II** – Lee Felsenstein, *Fonly, LLC*, Interrupt Controller

**7:45pm** **Athematic Short Talks** – Bob Wedig, *Wedig Consulting*, Timekeeper

- Big Data Compressed  
Dennis Allison, *Stanford University/Independent Consultant*
- Storage will be / A lot less free / Than it used to be  
David S.H. Rosenthal, *Stanford University Libraries*
- The Seagate Kinetic Open Storage Architecture  
Dave Anderson, *Seagate Technology*
- Teasing Big Robots: Behind the Scenes at the DARPA Robotics Challenge  
Chris Wellens and Karl Auerbach, *InterWorking Labs*
- Making Software for Creative People (Who Don't Believe They're Creative Yet)  
Kate Compton, *University of California, Santa Cruz*
- Getting the Software Train Out of the Station  
Betsy Zeller, *Independent*
- Why Are We Here? The Prehistory of Microcomputer Software  
John Wharton, *Applications Research*

**10:30pm** **The Gary Kildall Story**, *KCSM/Computer Chronicles Video (1995; 27 mins)*

## Thursday, April 24

**8:00am** **Old, New, Noisy, Blu: Lessons Learned From Big Data** – Brian A. Berg, *Berg Software Design*, Session Chair

- Big Lies and Small Truths About Big Data  
John Feland, *Argus Insights, Inc.*
- Freezing Exabytes of Data on Blu-ray Discs  
Kestutis Patiejunas, *Facebook, Inc.*
- Are You Interested? Using NLP to Extract User Archetypes From Dating Profile Text  
Thomas Levi, *PlentyOfFish Media, Inc.*

**9:45am** **Break**

**10:15am** **Works in Progress** – Marianne Mueller, *Asilomar Microcomputer Workshop*, Session Chair

- Time Sensitive Networking: Audio Video Bridging  
Eric Allman, *University of California, Berkeley*
- Interface Technologies That Have Not (Yet) Left the Lab  
Johnny Lee, *Google, Inc.*
- The Fall of the Stupid Network  
Paul Vixie, CEO, *Farsight Security*

**11:45am** **Lightning Round III** – Lee Felsenstein, *Fonly, LLC*, Interrupt Controller

**12:00n** **Lunch**



- 1:30pm Lightning Round IV** – Lee Felsenstein, *Fonly, LLC*, Interrupt Controller
- 1:45pm Widgets, Gadgets, and Things ... Oh My!** – Bruce Koball, *Motion West*, Session Chair
- The Photonic Fence: Fighting Malaria with Lasers  
Maclen Marvit, *Intellectual Ventures*
  - Back From the Dead: Retrofitting Furby for Network Connectivity  
Dave Hampton, *SoundsAmazing!*
  - There's More Than One Way to Scan a Cat  
Mark Dahmke, *Information Analytics*
- 3:00pm Break**
- 3:30pm Sports/Technology** – John Wharton, *Applications Research*, Session Chair
- Beyond Shrink It and Pink It: Sports Wearables Design For Everyone  
Jen Costillo, *Bia Sport*
  - Augmented Reality at the America's Cup: The Technology Behind A.C. LiveLine  
Stan Honey, *America's Cup Event Authority*
- 4:45pm Reception and Dinner**
- 7:30pm AMW Turns 40!** – Join us in Heather for Celebratory Cake and Champagne!
- 8:00pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *YOYOW*, RAT Patrol  
*Ten-minute presentations on any subject you choose. Contact Mary Eisenhart after registration to request your preferred time slot, first-come, first-reserved.*

## Friday, April 25

- 5:30am Pre-dawn data hunting and gathering** (Self-organizing; bring your own bit bucket)
- 8:00am Are We Safe Yet? Security Threats and Solutions** – Dan Kaminsky, *White Ops*, Session Chair
- A Billion Capabilities Served (and Counting)  
Jonathan S. Shapiro, Ph.D., *PixelFab, LLC*.
  - Heartbleed: Why We're Failing at Global Risk Analysis.  
Adam Cecchetti, *Deja vu Security*
  - Learning From Heartbleed: When Do We Start Solving The Right Problems?  
Dan Kaminsky, *White Ops*
- 9:30am Break**
- 10:00am Too Much Information!** – Bill Cheswick, *University of Pennsylvania*, Moderator  
*Opening remarks and group discussion. Panel members to include:*
- Bob Frankston, *Independant*
  - Dewayne Hendricks, *Tetherless Access*
  - Dan Kaminsky, *White Ops*
  - Tim Pozar, *Fandor*
  - David S.H. Rosenthal, *Stanford University Libraries*

- 11:30am Overview of IEEE Milestone Dedication Events†††**
- Brian A. Berg, *Berg Software Design*
  - Tom Rolander, *Former VP of Engineering, Digital Research, Inc.*
- Key events listed below. Maps and brochures are available describing the IEEE Milestones program and giving further details of this afternoon's events, times, locations, and speakers.*
- 11:45am Closing Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair
- 12:00pm Outdoor Lunch** (weather permitting)
- 2:00pm IEEE Milestone Dedication**, 300 Forest Ave. (*Pacific Grove City Chambers*)
- 4:00pm Street-Side Plaque Unveiling**, 801 Lighthouse Ave. (*Original Digital Research Offices*)
- 4:30pm IEEE Gala Reception**, 734 Lighthouse Ave. (*Former DRI Engineering Building*)

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### Program Committee

Brian A. Berg	Janet Guns	Tim Pozar
Bill Cheswick	Dewayne Hendricks	David S.H. Rosenthal
Sandy Clark	Dan Kaminsky	Ken Shoemaker
Fred Clegg	Bruce Koball	Fred Terman
Mary Eisenhart	Anne Mitchell	David Weekly
John Feland	Marianne Mueller	John Wharton

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† *Film noir* fans might enjoy the clip at <<https://www.youtube.com/watch?v=TMUJpec6Bdc>>; skip to 0:32.

†† Special thanks to Lee Felsenstein for acting as the Lightning Round interrupt controller. It's good to see the crowd-management skills he honed at the Homebrew Computer Club being put to good use.

††† The IEEE Milestone honoring Gary Kildall and the development of CP/M was championed by David Laws, Semiconductor Curator at the Computer History Museum, with much help from 35-year Asilomar veteran Tom Rolander. Brian Berg worked with the IEEE to put the dedication ceremony together and coordinate its timing with the AMW40 schedule.

Dr. Shoemaker, perennial Freebies Goat, arranged the stemware and lab coats.

And a very special thank you indeed to Janet Guns, for working so heroically to tie up many hundreds of loose ends. Without her work, **AMW40** simply could not have happened.

*See y'all next year, at **AMW41!***

*(April 15-17, 2015)*

<[www.amw.org](http://www.amw.org)>

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# AMW41

## The 41st Asilomar Microcomputer Workshop

April 15-17, 2015

*Motto: "In a Clean Room, No One Can Hear You Scream." †*

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### Wednesday, April 15

- 1:30pm Opening Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair  
John Wharton, *Applications Research*, Program Coordinator
- 1:45pm Looking Backward: Retrospectives on Emerging Technologies** – Brian Berg, *Berg Software Design*, Session Chair
- The Fairchild Notebooks: Curating Silicon Valley's Sacred Scrolls  
David Laws, *The Computer History Museum*
  - The Internet Archive: Hacking Cultural Institutions  
Brewster Kahle, *Internet Archive*
- 3:00pm Break**
- 3:30pm Eponymous Microprocessor Session: Redefining Architecture** – Ken Shoemaker, *Intel Corporation*, Session Chair
- Flash and Chips: A Case for Solid-State Warehouse-Scale Computers using Custom Silicon – Krste Asanović, *University of California, Berkeley*
  - Balboa: FPGA Time- and Space-Sharing on Novena  
Star Simpson, *Orion Labs*  
Andy Isaacson, *Noisebridge*
  - How It Really Works: Chip Design in the Age of IP Providers and Foundries  
Udo Walterscheidt, *Ericsson*
- 5:00pm Welcome Reception and Dinner**
- 7:30pm Athematic Short Talks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, Timekeeper
- Minitel: The Web Before the Web  
Bernard Peuto, *Concord Consulting*
  - Preserving Minitel's Legacy  
Marc Weber, *Computer History Museum*
  - Recursive Interaction Between Concepts of Virtual Worlds and the Technology That Creates Them – Bob Jacobson, *Bluefire Consulting*
  - It's Not Just About Computers: Rethinking Architecture for the Internet of Things – Pete Wilson, *Freescale Discovery Labs*

- Recovering and Recycling Out-of-Service Undersea Cables  
Sebastian Stephens, *The SubSea Group*
- Getting in Touch With Your Storage  
Tom Coughlin, *Coughlin Associates*
- Revisiting Mr. Cheswick: Fifty Facts for Finding Folks  
Ellen Cousins, *Primos Research*
- Notes of a Russian Serf: Working for Silicon Valley's Nouveau Nobility  
Lee Felsenstein, *Fonly Institute*

**10:30pm Late Night Snacks**

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## Thursday, April 16

**8:15am The Changing Face of Embedded Applications** – John Wharton, *Applications Research*, Session Chair

- Eight-Bit  $\mu$ Cs and the Serendipity of Smart-Transducer Networks  
John Wharton, *Applications Research*
- Fun With Embedded Arduinos!  
Mark Dahmke, *Information Analytics*
- Autonomous Vehicles on the Horizon  
Brad Templeton, *Singularity University*

**9:45am Break**

**10:15am Capturing and Reconstructing Reality** – Tim Pozar, *Late Night Software*, Session Chair

- Bridging the Physical and Digital Worlds Through 3D Reconstruction  
Matt Bell, *Matterport*
- A Cheap, Homemade LIDAR Scanner  
Robert Cousins, *Primos Storage Technology*
- The Death of Mass Production: How 3D Scanning and Printing will Lead to Custom Everything – Adrian Perez, *The Braject*
- Unexpected 3D Scanning  
Nikolai Oreshkin, *Artec 3D Group*

**11:45am Lunch**

**1:30pm To Infinity and Beyond!** – John Wharton, *Applications Research*, Session Chair

- NASA Explorations of Space: Everything Old is New Again  
Dennis Wingo, *Skycorp*
- Evaluating Commercial Off-the-Shelf Computers in Low-Earth Orbit  
Kathleen Morse, *Yosemite Space*
- Design Strategies for Long-Duration Space Missions  
Frank Zegler, *United Launch Alliance*

**3:00pm Break**

**3:30pm Security and Privacy of the Internet of Things** – David S.H. Rosenthal, *Stanford University Libraries*, Session Chair

- Embedded Device Insecurity  
Jim Gettys, *Google, Inc.*
- Protecting Disk Firmware From Attacks  
Dave Anderson, *Seagate Technology LLC*
- Late Secure Launch  
Andy Glew, *MIPS Technologies*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A *Rich* Asilomar Tradition** – Mary Eisenhart,  
*Mary Eisenhart Editorial Services, RAT Patrol*

*Ten-minute presentations on any subject you choose. Contact Mary Eisenhart immediately upon registration to request a time slot, first-come, first-served. Warning: Some time-slot shrinkage may occur as the witching hour draws nigh.*

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## Friday, April 17

**5:30am Pre-dawn tax filing marathon** (Self-organizing; bring your own stamps and excuses)

**8:15am Requests for Change: The Future of Security** – Dan Kaminsky, *White Ops, Inc.*,  
Session Chair

- Why Can't I Email My Doctor? How No DNSSEC Means No SEC  
Dan Kaminsky, *White Ops, Inc.*
- When Are We Going to Fix This Mess?  
Adam Cecchetti, *Deja Vu Security, LLC*

**9:30am Break**

**10:00am Looking Forward: Lessons Learned** – Bill Cheswick, *University of Pennsylvania*,  
Panel Moderator.

*Opening remarks followed by group discussion.*

- Internet and Computer Security: I Think We Are Going to Win  
Bill Cheswick, *University of Pennsylvania*
- The Future of Imagination: How Can We Ensure Creativity in an Increasingly  
Digital World? – Charlotte Lowe, *Writer and Poet*
- Rethinking Photovoltaic Energy Production  
Dave Newman, *Industry Gadfly*
- *Additional panel members may be announced*

**11:45am Closing Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair

**12:15pm Outdoor Barbecue Lunch** (weather permitting). Convene by the fire pit.

**2:30pm AMW41 Workshop Adjourns**

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### Program Committee



Brian A. Berg  
Bill Cheswick  
Fred Clegg  
Mary Eisenhart  
John Feland

Janet Guns  
Dewayne Hendricks  
Dan Kaminsky  
Bruce Koball  
Anne Mitchell  
Marianne Mueller

Tim Pozar  
David S.H. Rosenthal  
Ken Shoemaker  
Fred Terman  
John Wharton

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† *Dialog from Criminal Minds, Season 8/Episode 22, aired May 15, 2013.*

*Mark your calendars for AMW42, May 4-6, 2016.*

*("May the Fourth? Be with us!")*

< [www.amw.org](http://www.amw.org) >

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# AMW42

## The 42nd Asilomar Microcomputer Workshop

May 4-6, 2016

Motto: "Can We Really Be The Answer?"

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### Wednesday, May 4

**1:30pm** **Opening Remarks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, General Chair  
John Wharton, *Applications Research*, Program Chair

**1:50pm** **Updates from Far, Far Afield** – John Wharton, *Applications Research*, Chair

- Captain's Log: A Report from the *Tennessee Valley Interstellar Workshop*  
Robert G. Kennedy III, *TVIW* †
- Technoarcheology Update  
Dennis Ray Wingo, *Skycorp*
- Meanwhile, Back On the Farm...  
William Cheswick, *Gentleman Farmer*

**3:00pm** **Break**

**3:30pm** **Revisiting Alternative Energy** – Bob Cousins, *Cousins Consulting*, Chair

- The Future of Algae Farming: Replacing Fossil Fuels  
Aaron Wolfe Baum, *GreenSpring LLC*
- Carbon Nano-Tube Solar Cells  
Laurence H. Cooke, *NovaSolix, Inc.*
- Writing Geothermal Law for the Great Rift Valley: The Issues Are Deeper Than You Think  
Robert G. Kennedy III, *Tetra Tech*

**5:00pm** **Welcome Reception and Dinner**

**7:30pm** **Athematic Short Talks** – Marianne Mueller, *Asilomar Microcomputer Workshop*, Timekeeper

- A Flash in the Valley, and Other Industry Milestones  
Brian A. Berg, *Berg Software Design*
- The Benefits of Flexible Storage Controllers  
Richard Fetik, *Data Confidential*
- Emulation as a Preservation Strategy  
David S.H. Rosenthal, *LOCKSS Program*
- Comparative Skeletal Anatomy: Bones Are Cool!  
Kirsten Malmquist, *Safari West Wildlife Preserve*
- A Thousand People Driven by Code at 200 MPH  
D J Capelis, *Capelis Discarnate*
- The Tracery Programming Language (or: How I Found Out What I'd Actually Created)  
Kate Compton, *UC Santa Cruz*
- Frugal Engineering: A Hand Cranked Defibrillator  
Sreeram Dhurjaty, *Dhurjaty Electronics Consulting LLC*
- Open Source Legalese: Software is Eating Law  
Virgil Griffith, *Backbone Telecommunications*

**10:30pm** **Late Night Snacks**

## Thursday, May 5

**8:30am The Future of Eponymous Microprocessors: RISC, VISC, or NISC?** – Ken Shoemaker, *Intel Corporation*, Chair

- New Frontiers in Computing  
Ken Shoemaker, *Intel Corporation*
- RISC-V: Instruction Sets Want to be Free  
Krste Asanović, *UC Berkeley*
- VISC™: A New CPU Architecture  
Mohammad Abdallah, *Soft Machines, Inc.*
- Neural Net Accelerators for Machine Learning Workflows  
Jeremy Bruestle, *10<sup>26</sup> Labs, Inc.*

**10:00am Break**

**10:30am Deep Understanding: The Search for Intelligent Life in Cyberspace** – Brian A. Berg, *Berg Software Design*, Chair

- Applying Machine Learning to Web Discrimination Problems  
Chuck McManis, *IBM Corporation*
- Building Search for the Wayback Machine  
Greg Lindahl, *Internet Archive*
- Exposing and Searching the Dark Web  
Virgil Griffith, *Backbone Telecommunications*

**12:00n Lunch**

**1:30pm Looking at Crowds from Both Sides Now** – Dewayne Hendricks, *Tetherless Access*, Chair

- Circuit Stickers: From Research Project to Research Product  
Jie Qi, *MIT Media Lab*
- My Crowdfunding Experiences  
David S.H. Rosenthal, *LOCKSS Program*
- Kickstarting Transporter  
Geoff Barrall, *Imation*
- Crowdfunding Experiences II  
Dewayne Hendricks, *Tetherless Access*

**3:00pm Break**

**3:30pm Mobile Robots and Autonomous Machines** – John Wharton, *Applications Research*, Chair

- An Autonomous Coffee Run with a Mobile Robot  
Tony Pratkanis, *Stanford University*
- How to Train Your Robot  
Choong Ng, *10<sup>26</sup> Labs, Inc.*
- After Moore: Autonomous Machines and The Next Big Thing  
Dave Wyland, *The Wyland Group*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A Rich Asilomar Tradition** – Mary Eisenhart, *Mary Eisenhart Editorial Services*, RAT Patrol

*Ten-minute presentations on any subject you choose. Contact Mary Eisenhart immediately upon registration to request a time slot, first-come, first-reserved. Slots get grabbed up fast! Warning: Some time-slot shrinkage may occur as the witching hour draws nigh.*

## Friday, May 6

- 5:30am** Pre-dawn autonomous dune buggy races (Self-organizing; bring your own LIDAR filters)
- 8:30am** **The Future of AMW: Is There Life After 43?** – Marianne Mueller, *Asilomar Microcomputer Workshop*, Discussion Leader
- 9:00am** **Threat Vectors: Technology, Security, and Society** – Bill Cheswick, *Visiting Scholar, University of Pennsylvania*, Chair
- The IoT, Self-Driving Cars, and Other Extraordinary Threats to Humanity  
Paul Vixie, *Farsight Security, Inc.*
  - Radical Leveling Technologies: What They Are, Why They Matter, and the Challenges to Come – Maj. Jennifer Snow, *USAF*
- 10:00am** **Break**
- 10:30am** **What's the Next Big Question?** – Bill Cheswick, *Wandering Scholar*, Panel Moderator
- Panel discussion. Panel members to include:*
- Allan Alcorn, *Hack the Future*
  - Dave Hampton, *Dave Hampton Engineering*
  - Marc Kaufman, *Adobe Systems, Inc.*
  - Maj. Jennifer Snow, *USAF*
- Additional panel members to be announced*
- 11:45am** **Closing Remarks. Marianne Mueller** – *Asilomar Microcomputer Workshop*, General Chair
- 12:00n** **Outdoor Group Lunch** (weather permitting). Convene in the fire pit/picnic area
- 2:30pm** **AMW42 Workshop Adjourns**

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### Program Committee

Brian A. Berg		Anne P. Mitchell
Bill Cheswick	John Feland	Marianne Mueller
Sandy Clark	Janet Guns	David S.H. Rosenthal
Fred Clegg	Dewayne Hendricks	Ken Shoemaker
Bob Cousins	Dan Kaminsky	Fred Terman
Mary Eisenhart	Bruce Koball	John Wharton

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† See <[tinyurl.com/AMW42-TVIW](http://tinyurl.com/AMW42-TVIW)> for *Wired Magazine*'s article on RGKIII's TVIW

Congrats, Lee Felsenstein, for being named a Computer History Museum Fellow

$$2016 = 2^5 \cdot 3^2 \cdot 7 = 0000011111100000_2; 42 = 2 \cdot 3 \cdot 7 = 0101010_2 = 222_4$$

$$2016/42 = 48 = 2^4 \cdot 3 = 0000110000_2 = 00300_4 = 060_8 = 030_{16}$$

Thanks, Tim Pozar, for producing Radio Free Asilomar

*Join us for AMW43, April 19-21, 2017*

*Stay tuned to <[www.amw.org](http://www.amw.org)>*

*& Thanks for Coming!*



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# AMW43

## The 43rd Asilomar Microcomputer Workshop

April 19-21, 2017

Motto: "43rd Time's a Charm!" -or- "Oui, Robots!"

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### Wednesday, April 19

- 1:30pm Opening Remarks** – Robert G. Kennedy III, *Ultimax Group, Inc.*, General Chair  
John Wharton, *Applications Research*, Program Chair  
A Message from Marianne Mueller, *AMW Chairman Emeritus*
- 1:45pm Retrospective** – Brian Berg, *Berg Software Design*, Chair
- Silicon Valley: A Century of Entrepreneurial Innovation  
David A. Laws, *The Computer History Museum*
  - The Amiga 1000: A Hardware Engineering Story  
Ronald H. Nicholson, Jr., *Unaffiliated*
  - Making SHAKY: The First Robot with Artificial Intelligence  
Dr. Peter Hart, *Retired*
- 3:00pm Break**
- 3:30pm How It Happened** – Anne Mitchell, *ISIPP*, Chair
- Fake News, Social Media, and the Election: Echo Chambers and the Competition for Our Attention – Giovanni Luca Ciampaglia, *The Hoaxy Project, Indiana University*
  - No Good Deed Goes Unpunished  
Dr. Paul Vixie, *Farsight Security, Inc.*
  - Hack the Vote: Election 2016  
Dr. Rebecca Mercuri, *Notable Software, Inc.*
- 5:00pm Welcome Reception and Dinner**
- 7:30pm The Ritual Running of the Newbies** – Robert G. Kennedy III, *Ultimax Group, Inc.*, Newbie Wrangler
- 7:50pm Athematic Short Talks** – Robert G. Kennedy III, Timekeeper
- How it All Began (and Why)  
Mary Eisenhart, *Mary Eisenhart Editorial Services*; with Lee Felsenstein and Bob Frankston
  - A New Software Social Contract  
Eric Hughes, *Unaffiliated*
  - Pining for Software Utopia  
Anatole Shaw, *Twitter, Inc.*
  - Controlling Government Surveillance: Oakland Leads the Way  
Lou Katz, *Metron Computerware, Ltd.*
  - How I Finagled about a Dozen Invitations to White House Events – Nancy Blachman, *Julia Robinson Mathematics Festival* (Founder) and *Gathering 4 Gardner* (Chair)
  - Mind Your Own Beeswax: Hacking the Broodminder Apiary Controller  
Bill Cheswick, *Gentleman Farmer*
  - What a Long, Strange Trip It's Been: AMW, Government, and the Future of Technology Partnering – Maj. Jennifer J. Snow, *United States Air Force*<sup>†</sup>

**10:30pm Sneak Preview: *The Silicon Valley Revolution***, a documentary by Jan Tenhaven

## Thursday, April 20

**8:15am I, Car -or- Highway to (Robot Car) Hell** – Brian Berg, *Berg Software Design*, Chair

- The Consumer Perspective of Our Autonomous Future  
Timothy E. Woods, *Autonomous Vehicle Alliance*
- MacroBase: An Analytics Engine for Prioritizing Attention in Fast Data  
Kexin Rong, *Ph.D. Candidate, Stanford University*
- Domain-Specific Languages for Programming Autonomous Vehicles  
Sridhar Sharma, *Intel Labs*
- The Human Side of Robot Cars  
Dr. Ioannis Kanellakopoulos, *Oraton Consulting*

**10:00am Break**

**10:30am Eponymous Microprocessor Session** – Ken Shoemaker, *Intel Corporation*, Chair

- Dealing with Larger Virtual Memory Pages  
Dick Sites, *Ex-Google*
- 3D Graphics and the Evolution of Mobile GPUs  
Michael Shebanow, *Samsung Semiconductor, Inc.*
- The REX Neo: A High-Performance, Power-Efficient Many-Core Architecture  
Thomas Sohmers, *REX Computing*

**12:00n Lunch**

**1:30pm Technology Vehicles and Intelligent Machines** – John Wharton, *Applications Research*, Chair

- Orbiting the Earth (sort of) for \$328 and 7 Grams of Rocket Fuel  
Phil Karn, *Retired*
- From Robot Wheelchairs to Hacking Cars  
Specter, *@dicesoft.net*
- Zero-Shot Translation: Google's Multilingual Neural Machine Translation System  
Melvin Johnson, *Google, Inc.*

**3:00pm Break**

**3:30pm Beneficial Cooperation: Building Bridges Between Government and Technology**

**Communities** – Maj. Jennifer Snow, *USAF and SOFWERX Military Tech Incubator*, Chair

- Emerging Disruptive Technologies and Self-Regulating Communities  
Dr. Leo Blanken, *Naval Postgraduate School*
- Defending Nothing: An Analog Model for Cyber Defense – Cdr. Pablo Breuer, *Naval Postgraduate School and Navy Center for Information Warfare and Innovation*
- iGem: Reaching Out to the Biohacker Community  
Dr. Megan Palmer, *Stanford University Center for International Security and Cooperation*

**Panel discussion and Q&A** – Jen Snow, Moderator

*Above speakers to be joined by:*

Kristen Tsolis, *Naval Postgraduate School RoboDojo*

**5:00pm Reception and Dinner**

**7:30pm Open Discussion: A *Rich* Asilomar Tradition** – Mary Eisenhart, *Mary Eisenhart Editorial Services, RAT Patrol*

*Ten-minute presentations on any subject you choose. Contact Mary Eisenhart immediately upon registration to request a time slot, first-come, first-reserved. All attendees welcome to sign up. Try not to dawdle; slots get grabbed up fast! Warning: Some time-slot shrinkage may occur as the witching hour draws nigh.*

## Friday, April 21

- 5:30am Pre-dawn robot dune buggy races** (Self-organizing; bring your own robot dune buggy)
- 8:15am A Conversation on Time, Causality, and Human Expectations** – Brian Berg, *Berg Software Design*, Chair
- A Datacenter Without Timeouts  
Dr. Alan Karp, *EARTH Computing Corp.*
  - Unbase: a Distributed Database for Human Interaction  
Daniel Norman, *güdTECH, Inc.*
  - Time for a New Model of Time in Computer Science?  
Dr. Paul Borrill, *EARTH Computing Corp.*
- Panel: Do Our Models of Time and Causality in Computer Science Need an Upgrade?**  
– Paul Borrill, *EARTH Computing Corp.*, Moderator
- 10:00am Break**
- 10:30am AMW Past, Present, and Future: What's in Store for '44?**  
*Open Group Discussion* – Robert G. Kennedy III, *Ultimax Group Inc.*, Moderator
- 11:45am Closing Remarks**
- 12:00n Outdoor Barbecue Lunch** (weather permitting). Convene in the fire pit/picnic area near the flagpole.
- 2:30pm AMW43 Workshop Adjourns<sup>††</sup>**

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### Organizing Committee

Brian A. Berg		Marianne Mueller
Bill Cheswick	Janet Guns	David S.H. Rosenthal
Fred Clegg	Dewayne Hendricks	Ken Shoemaker
Bob Cousins	Robert G. Kennedy III	Jen Snow
Mary Eisenhart	Bruce Koball	Fred Terman
John Feland	Anne P. Mitchell	John Wharton

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<sup>†</sup>Maj. Jennifer Snow has asked to be identified as “JJ Snow, Geek Gamer Girl and Friendly Fed”.

<sup>††</sup>Contact Brian Berg for info on Friday's dedication of a Gary Kildall plaque at the NPS.

A memorial service for Becky Bace will be held at 4:30pm Friday in San Jose;  
Contact Mary Eisenhart or pick up a printed flyer for address and details.

Thursday marks the 45th anniversary of the Apollo 16 moon landing.

Friday marks 25 years since the discovery of extrasolar planets.

Saturday Cassini deorbits for its terminal mission phase.

The numbers 2017 and 43 are both, alas, prime.

*Please join us for AMW44, [dates TBD].*

*Stay tuned to <www.amw.org>,*

*& Thanks for Coming!*

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# AMW44

## The 44th Asilomar Microcomputer Workshop

April 25-27, 2018

*Motto: "It's Always Raining Stone Soup Here"*

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### Wednesday, April 25

- 1:30pm** **Opening Remarks** – Robert G. Kennedy III, PE, *Ultimax Group/Tetra Tech*, General Chair  
Newbies Raise Hands; Kudos to Our Treasurer, and also Mystery Melipater|mater
- 1:45pm** **Barlow Was Right about Africa (part I)**—Robert G. Kennedy III, PE, *Tetra Tech*, Lead
- Why Everything You “Know” re: Africa Is Wrong—The Future I Saw in the Rift Valley  
RGK3, *Ultimax Group/Tetra Tech*
  - The Mongol Cheese Caper: How the Internet Slipped Into Mongolia  
Dewayne Hendricks, *Tetherless Access, Inc*
  - Lions On The Runway, And Electrons And Photons Spin Counterclockwise: The Uneven Truth of Telecom in Africa—Michael Kleeman, *University of California, San Diego*
- 3:00pm** **Break**
- 3:30pm** **Barlow Was Right about Africa (part II)**—Robert G. Kennedy III, PE, *Tetra Tech*, Lead
- 5 Vignettes re: Distributed vs. Monolithic (cells v. landlines, mobile money v. banks, drones v. roads, local clinics, solar clean water)—John Novitsky, *independent consultant*
  - Burkina Faso—The New Hub for Technological Experiment (and/or) Innovation?  
Désiré Banse & Carol Zigani, *Prometheus Computing*
  - Delphic Extemporaneity about Africa’s Promise & World’s Technofuture  
RGK3 and LTC Jennifer J. Snow, *Donovan Group & SOFWERX*
- 5:00pm** **Welcome Reception and Dinner inc. Toast *en masse in memoriam***
- 7:30pm** **The Running of the Newbies** – Robert G. Kennedy III, *Ultimax Group*, Newbie Wrangler
- 7:45pm** **Athematic Short Talks** – Robert G. Kennedy III, Timekeeper
- Voice, Event Driven Context, and Vacuum Tubes—Mark Lacas, *MediaFolio*
  - Seeing into the Future of Visual Search—Kathleen Tuite, *GrokStyle*
  - Representing History, Visualizing Graph Databases—Julian Gomez, *Polished Pixels®*
- 8:45pm** **Short Break: Last Call for Alcohol**
- Why the Internet’s at the Center of Everything Today—Bob Frankston, *frankston.com*
  - Net-connected Medical Devices: What Could Possibly Go Wrong?—David Snyder, *42TEK, Inc.*
  - What Happens to Price of Plastic After We Stop Burning Oil?—Chuck McManis, *Spectranetix*
  - You Can’t Get to the Moon by Building More Ladders, or, Neural Nets Won’t Save Us—  
DV Henkel-Wallace, *leela.ai*
  - Spectre: A Clever Villain's Tale—Art Kahlich, *Mill Computing*
  - To Bee or Not To Bee, That Is the Question: Bad Puns and the Search for Useful Data on a Scientist’s Farm and Apiaries—Lorette Cheswick, *cheswick.com*
  - **Wednesday late night screening:** Ches analyzes a short cold war propaganda piece on security by Chuck Jones—Bill Cheswick, *Gentleman Farmer*

## Thursday, April 26

- 8:00am Eponymous  $\mu$ Processor Session: Smeltdown & Other Vulnerabilities**– Ken Shoemaker, *Intel Corporation*, Lead
- Spectre and Meltdown: the Evil Ghost in Your Machine  
Andy Glew, *comp-arch.net*
  - The Significance and Implications of the Backdoor Problem  
Mark Cummings, *Orchestral Networks*
  - Securing Processors from Time-Side Channels  
José Renau, *University of California Santa Cruz*
- 9:30am Break**
- 10:00am Autonomous Self-Driving What?** – Brian Berg, *Berg Software Design*, Lead
- Connecting the Autonomous Vehicle  
Eamon Heskin, *Deutsche Telekom*
  - Measuring Community Acoustic Impact for Urban Air Mobility  
David Josephson, *Josephson Engineering, Inc.*
  - Not Running People Over, and Other Hot Issues in Robocars  
Brad Templeton, *robocars.com*
- 11:30am Lunch**
- 1:00pm Centrifugal vs. Centripetal: Are Bitcoin and “Illegal” Microsats Harbingers of the End of the Westphalian Order?** – Paul Vixie, *Farsight Security*, Lead
- Safety in Numbers  
Paul Vixie, *Farsight Security*
  - Unintended Energy Consequences of Bitcoin Mining  
Christine Cockey, *Mistral Mountain*
  - The Legal Implications of the Illegal Launch of Swarm Satellites  
Dennis Wingo, *Skycorp*
  - (1) The Instruments of Power & (2) Virtual Nations  
(1) CDR Pablo Breuer & (2) LTC Jennifer Snow, *Donovan Group & SOFWERX*
- Panel discussion and Q&A** – Paul Vixie, *Farsight Security*, Moderator  
*Above speakers to be joined from the Naval Postgraduate School by:*  
Leo Blanken, *Defense Analysis Dept.*, Kristen Tsohis, *RoboDojo*
- 3:00pm Break**
- 3:30pm Computational Craft and Creative Computing: Art, Play & Learning**–Jie Qi, *Chibitronics*, Lead
- Algorithms with Paper and Thread  
Natalie Freed, *nataliefreed.com*, *educator and designer, Austin TX*
  - Parametric Thinking in Design, Learning, and Teaching  
Paula Hooper, *Northwestern University*
  - CPU Dumplings and Soft Care  
Taeyoon Choi, *School for Poetic Computation*
  - When Skin Meets Technology  
Katia Vega, *UC Davis*
- Panel discussion and Q&A**–Jie Qi, *Chibitronics*, Moderator
- 5:00pm Reception and Dinner**
- 7:30pm Open Discussion: A Rich Asilomar Tradition**–Mary Eisenhart, *Mary Eisenhart Editorial Services*, and Kathleen Tuite, *GrokStyle*, RAT Patrollers
- Ten-minute presentations on any subject you choose. Contact Mary or Kathleen immediately upon registration to request a time slot, first-come, first-reserved. All attendees welcome to sign up. Don't dawdle; slots get grabbed up fast! Warning: Some time-slot shrinkage may occur as the witching hour draws nigh, meaning your turn may come sooner than you think.*

## Friday, April 27

**5:30am Pre-dawn microsat launching** (self-organizing; bring your own boosters)

**8:00am What's Gonna Happen to Work?**–Julian Gomez, *Polished Pixels®*, Lead

- Introduction  
Julian Gomez, *Polished Pixels®*
- Some Thoughts on Work  
Michael Hammer, *Web Operations Security*
- Habits of a Highly Effective Superforecaster  
Ellen Cousins, *Primos Research*
- Pulling Back the Curtain from Technology  
Bill Pollock, *No Starch Press*

**Panel Conversation on the World after Work** – Julian Gomez, *Polished Pixels®*, Moderator  
*Above speakers to be joined by: Kristen Tsolis, Naval Postgraduate School RoboDojo*

**9:30am Break**

**10:00am Catching A Little Bit of Heaven**–T. Marshall Eubanks, *Asteroid Initiatives LLC*, Lead

- Backgrounder on Interstellar Interlopers: Getting Ready for the Next Surprise  
Robert G. Kennedy III, PE, *Ultimax Group, Institute for Interstellar Studies-US*
- Such a Long Time To Be Gone, Only a Few Milliseconds To Be There: Exploration of  
Passing Interstellar Asteroids–T. Marshall Eubanks, *Asteroid Initiatives LLC*
- Interstellar Capabilities: Why the Biggest Laser is Not Big Enough  
Dan Fries, *Georgia Tech; Institute for Interstellar Studies-US*

**11:30am Special Thanks/Recognition, What's Coming @ AMW #45 in 2019? & Closing Remarks**

*Open Group Discussion* – RGK3, *Ultimax Group*, General Chair & Moderator

**12:00n Outdoor BBQ Lunch & Group Photo** (weather permitting). Re-convene in picnic area.

**2:30pm AMW44 Workshop Adjourns**

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### Organizing Committee

#### Core Committee

Brian A. Berg  
Mary Eisenhart  
Janet Guns  
Dewayne Hendricks  
Robert Kennedy  
Bruce Koball  
Marianne Mueller  
Tim Pozar  
Ken Shoemaker

#### Peripheral Committee

Bill Cheswick  
Anne P. Mitchell  
John Wharton  
  
Brain Trust  
Bob Cousins  
David S.H. Rosenthal

#### Emeritus Committee

Fred Clegg  
Fred Terman

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**Wednesday** is “World DNA Day”–65 years ago, Watson & Crick published their discovery of the double helix. A year later, Bell Labs demoed the first practical solar cell. 8 years later, Robert Noyce got a patent for the IC. 62 years ago this **Thursday**, the first successful container ship, *SS Ideal X*, took to the sea. Arguably, Malcom McLean’s big idea changed the world as much as the IC has.

**Friday** marks 37 years since Xerox PARC introduced the computer mouse.

*Please join us for AMW45, April 24-26, 2019*

*Stay tuned to [www.amw.org](http://www.amw.org)*

*& Thanks for Coming!*

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# AMW45

## The Forty-Fifth Asilomar Microcomputer Workshop



April 24-26, 2019

*Chiaroscuro Motto: "Via Silicon Dioxide Darkly"*

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**Wednesday, April 24**

*entre'acte: Clair de Lune/Moonlight, NASA Goddard Space Flight Center*

- 1:30pm** **Opening Bookend-Framing Device / Call for Volunteers & Gifts**—Robert G. Kennedy III PE (hereinafter just "RGK3"), *Ultimax Group*, General Chair
- 1:44pm** **Newcomers Raise Hands**
- 1:45pm** **Remembering Those We Have Lost Since AMW44**—Brian Berg, *Berg Software Design*, Lead  
*In memoriam:* Ted Laliotis, John Wharton (from brother Bob Wharton), Bernard Peuto (from Bennett Smith), David Warman (from widow Ann Warman), and Bill Godbout
- 2:15pm** **"Through a Glass, Darkly"**—Mark Cummings, *Orchestral Networks*, Lead
- My Computer Likes Me, and Other Parables of the Future—Dennis Allison, *Stanford EE380*
  - "Outlandish" Technological Threats to Civil Liberties: How We Did—RGK3, *Ultimax Group*
  - How the Digital Domain Can Save the World's Languages  
Laura Welcher, *Long Now Foundation*
- 3:45pm** **Pre-Athematic Short Talks**—Ken Shoemaker, *Intel Corp.* Timekeeper-gavelmeister
- Apollo 11's Laser Experiment & DIALOG Search System—Brian Berg, *Berg Software Design*
  - Webcams in Space: The Next Generation—Rick Voreck, *SSL/Maxar*
- 4:15pm** **Break / Room Check-in**
- 5:30pm** **Dinner**
- 6:30pm** **Evening Reception Opens** (next door in the Toyon Room, with a real fire in the fireplace)
- 7:00pm** **Domain-Specific Architectures for Deep Neural Networks**—David Patterson, *Google Brain*,  
*University of California Berkeley*, introduction by Brian Berg, *Berg Software Design*
- 7:50pm** **Short Break/Reception/Meet & Greet with Dave**
- 8:15pm** **Meet the New Minds: 32 elevator speeches**—RGK3, *Ultimax Group*, Newbie Wrangler
- 8:40pm** **Athematic Short Talks**—Ken Shoemaker, *Intel Corp.* Timekeeper-Gavelmeister
- Geopolitics and the Future of Money: Crypto Concerns—Girish Nandakumar, *Donovan Group*
  - Blockchain: What's Not to Like?—David S.H. Rosenthal, *Stanford (retired)*
- 9:15pm** **Short Break**
- Perceptual Compression for Video Storage and Processing—Amrita Mazumdar, *Univ. of Wash.*
  - On Becoming a Person: An African Notion for Ethics and Equality in Machine Learning—  
Sabelo Mhlambi, *Berkman Klein Center*
  - Tech: A Way to Revolutionize the African Youth—Carole Zigani, *Zidox & Désiré Banse*,  
*Prometheus Computing*
  - The Life of a Dollar—Chuck McManis, *Spectranetix Inc.*
  - Self Sovereign Identity Technology—Kaliya Young, *Identity Woman*
  - Correcting Software Bugs, Automatically—Charlie Bedard, *OpenRefactory*
  - What I Learned by Watching Investors for Three Years—Andy Freeman, *find.xyz*

## Thursday, April 25

- 8:00am Overflow Buffer for Athematic Tech Talks**—Ken Shoemaker, *Intel Corp.*, gavelmeister
- Update on Liquid Robotics Waveglider—James Gosling, *Amazon Web Services*
  - Moore’s Law Meets Amdahl’s Law—Clem Cole, *Intel Corp.*
  - Gen-Z: A Universal System Interconnect—Keith Packard, *Altus Metrum*, *HP Enterprise*
  - The Cadence/Tensilica DNG 100ML Inference Engine—Michael Shebanow, *Tensilica*
- 9:15am Break**
- 9:45am Eponymous (Rad-Hard)  $\mu$ Processor Super Session**—Ray Ladbury, *NASA Goddard Space Flight Center*, Lead
- Bringing Single Event Effects Down to Earth  
Ray Ladbury, *NASA Goddard Space Flight Center*
  - Nuking Things in the Berkeley Nuclear-Free Zone  
Mike Johnson, *Lawrence Berkeley National Laboratory*
  - Living with Radiation or, How I Learned to Stop Worrying and Love the Bomb  
Heather Marie Quinn, *Los Alamos National Laboratory*
  - When the “Meta Machine” Hears the Banshee Wail of the Universe  
Robert Baumann, *Radiosity Solutions*
- Panel discussion and Q&A**—Ray Ladbury, *NASA Goddard Space Flight Center*, Moderator
- 12:00n Lunch**
- 1:30pm Cybersecurity Session “Oops! We Have to Make This Secure?”**—Pablo Breuer, *U.S. Special Operations Command*, Lead
- Approximate Query and the Too Large Behavioral Data Problem  
Joel Holland, *SecurityOnDemand.com*
  - Misinformation on the Dark Net: A Good Guy’s Screed for Becoming a Troll without Shooting Yourself in the Foot  
Tom Richards, *GroupSense*
  - Cell Sharking: Hunting Stingrays and Other Rogue Cell Towers  
Karl Koscher, *University of Washington*
- 3:00pm Break**
- 3:30pm Leading Edge Communications Session: “From Here to There”**—Christine Cockey, *Mistral Mountain*
- Using Cellular to Connect the Connected Car (plus a demo)  
Eamon Heskin, *Deutsche Telekom*
  - Vehicle-Mounted Basestations: From Ninjas to Vehicles  
Yoshioki Chika, *Softbank*
  - A New SDR RF Frontend Based on Breaking Every Rule of Polar Amplifiers  
Doug Kirkpatrick, *Eridan Communications*
- 5:00pm Reception and Dinner**
- 7:30pm Open Discussion: A Rich Asilomar Tradition**— Kathleen Tuite, RAT Patrollers
- Ten-minute presentations on any subject you choose. Contact Kathleen immediately upon registration to request a time slot, first-come, first-reserved. All attendees welcome to sign up. Don’t dawdle; slots get grabbed up fast! Warning: Some time-slot shrinkage may occur as the witching hour draws nigh, meaning your turn may come sooner than you think.*



## Friday, April 26

- 5:30am Pre-dawn JHW Memorial Séance/Self-Organizing Braitenberg Vehicle Rally** (see what emerges)
- 8:00am Countering Power-Based Misinformation**—Sara-Jayne Terp, *Bodacea Light Industries*, Lead
- Influence Operations in a Post-Westphalian World—Pablo Breuer, *U.S. Spec. Ops Command*
  - Countering with Social Movements—Frank Heidt, *Leviathan Security*
- Panel discussion and Q&A**—Sara-Jayne Terp, *Bodacea Light Industries*, Moderator  
with: Frank Heidt, Pablo Breuer, Wenona Benally, Désiré Banse, and Paul Vixie
- 9:30am Break**
- 10:00am Threat Model**—Lou Katz, *Oakland Privacy Advisory Commission*, Lead & Introduction
- Privacy is Dead...You May Be Next—Ellen Cousins, *Primos Research*
  - Transportation and Anonymity, Or the End of It—Brad Templeton, *robocars.com*
  - I Am Not a Number—Paul Vixie, *Farsight Security, Inc.*
- 11:30am Thanks/Kudos, Call for Vols & Gifts, What's Coming @ AMW46, Closing Bookend**—RGK3
- 12:00n Outdoor BBQ Lunch & Group Photo** (weather permitting, re-convene in fire pit area)  
Structured Discussion: With Four Leading Questions to Develop Themes for Next Time—  
RGK3, Facilitator
- 2:00pm AMW45 Workshop Adjourns**

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### AMW45 Organizing Committee

#### Core Committee

Brian Berg  
Mark Cummings  
Janet Guns  
Dewayne Hendricks  
Robert Kennedy  
Bruce Koball  
Marianne Mueller  
Tim Pozar  
Jie Qi  
Ken Shoemaker  
Kathleen Tuite

#### Peripheral Subcommittee

Bill Cheswick  
Mary Eisenhart  
*Brain Trust*  
Bob Cousins  
David S.H. Rosenthal  
Jen Snow  
Dennis Allison

#### Emeritus Subcommittee

Fred Clegg  
Fred Terman

### General Chairs of Yore

Ted Laliotis (RIP), 1975-1983	Mary Eisenhart, 2002-2005
Allan Schiffman, 1984	Anne Mitchell, 2006-2007
John Wharton (RIP), 1985-1997	Marianne Mueller, 2008-2016
Brian Berg, 1998-2000	Robert Kennedy, 2017-
Mark Laubach, 2001	

### Program Chairs of Yore

Fred Coury and Fred Clegg, 1975-1983    Bob Wedig, 1998    John Wharton (RIP), 1999-2017

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**Wednesday** is World DNA Day.\*\* 65 years ago, Watson & Crick published their discovery of the double helix. A year after that, Bell Labs demoed the first solar cell. 8 years later, Robert Noyce got a patent for the IC. 62 years ago this **Thursday**, the first successful container ship, *SS Ideal X*, took to the sea, which changed the world as much as the IC has. 160 years ago, British & French engineers broke ground for the Suez Canal. **Friday** marks 37 years since Xerox PARC introduced its version of the computer mouse.

\*\* Tuesday is Soylent Green Day.

Please join us here for AMW46: May 6–8, 2020. Stay tuned to [www.amw.org](http://www.amw.org)  
Suggestions for speakers, participants, or session topics for AMW46: [chair@amw.org](mailto:chair@amw.org)

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# AMW47

## The Forty-Seventh Asilomar Microcomputer hypoWorkshop

April 28-30, 2021

*Pedal to the Zoom! | ne virus gerunt in vobis*

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### Wednesday, April 28 (all times Pacific!)

- 6:00pm** **Pandemic Greetings, Call for Volunteers & Gifts**—Robert G. Kennedy III PE (hereinafter just “RGK3”), *Ultimax Group*, General Chair
- 6:05pm** **Newcomers Raise Hands on Camera, give their Elevator Speeches**
- 6:15pm** **Zoomin Search Engine**
- 6:30pm** **Evening Reception Opens** (virtual fire & tunes provided by OrgComm)

### Thursday, April 29 (all times Pacific!)

- 6:00pm** **Open Discussion: A Rich Asilomar Tradition**—Kathleen Tuite, RAT Patrollers  
*Ten-minute presentations on any subject you choose. Contact Kathleen immediately upon registration to request a time slot, first-come, first-reserved. All participants welcome!*  
<https://forms.gle/7Xcmk7QKFCsu9Ty87> *Don't dawdle; slots get grabbed up fast!*

### Friday, April 30 (all times Pacific!)

- 9:00am** **Q&A about programs in "Saving the World"**—Mark Cummings, *Orchestral Networks*, Lead
- Farmers Helping with Global Warming—John Novitsky, *Co-founder, Aqua-Prawnics*
  - Overcoming Intermittency Associated with Renewable Power Generation—Paul Monus, *EnergyTransitionDynamics.com*
  - Evaluating Full Spectrum of Geoengineering Techniques for Mitigating Climate Change—RGK3 & his crew of the next generation of young geengineers, *Ultimax Group Inc.*
- 10:00am** **Break**
- 10:15am** **Q&A about programs in "Technology Diffusion"**—Ken Shoemaker, *Intel emeritus*, Lead
- Speed Bumps in Computational Thinking—Dennis Allison, *emcee-impresario, EE 380, Stanford University*
  - The Good and Bad of Additive Manufacturing—Mary Baker, *HP, Inc.*
  - The Doctor Will Hear You Now—David Weekly, *CEO, Medcorder*
- 11:15am** **Break**
- 11:30am** **Q&A about programs in "Tomorrow and Yesterday"**—Brian Berg, *Berg Software Design*, Lead
- What's New in Robotic Transport and Cities—Brad Templeton, *robocars.com*
  - The Entropy's the Limit—Paul Vixie, *Farsight Security, Inc.*
  - A Biography of the Pixel—Alvy Ray Smith, *Co-founder, Pixar*
- 12:30pm** **Thanks/Kudos, Call for Vols & Gifts, What's Coming @ AMW48**—RGK3

Stay tuned here: <https://amw.org/2021-workshop-update/>

Programs on YouTube: <https://www.youtube.com/playlist?list=PLpP0ULBX1rqTppvldFDg3HVk4VIqfHi0J>

A Zoom link to the virtual hypoWorkshop will be emailed out to all registrants

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### AMW47 Organizing Committee

#### *Core Committee*

Brian Berg  
Mark Cummings  
Janet Guns  
Dewayne Hendricks  
Robert Kennedy  
Bruce Koball  
Marianne Mueller  
Tim Pozar  
Jie Qi  
Ken Shoemaker  
Kathleen Tuite

#### *Peripheral Subcommittee*

Bill Cheswick  
Mary Eisenhart  
*Brain Trust*  
Bob Cousins  
David S.H. Rosenthal  
Jen Snow  
Dennis Allison

#### *Emeritus Subcommittee*

Fred Clegg  
Fred Terman

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Ted Laliotis (RIP), 1975-1983	Mary Eisenhart, 2002-2005
Allan Schiffman, 1984	Anne Mitchell, 2006-2007
John Wharton (RIP), 1985-1997	Marianne Mueller, 2008-2016
Brian Berg, 1998-2000	Robert Kennedy, 2017-
Mark Laubach, 2001	

### Program Chairs of Yore

Fred Coury and Fred Clegg, 1975-1983    Bob Wedig, 1998    John Wharton (RIP), 1999-2017

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**Wednesday** 35 years ago, high levels of radiation resulting from the Chernobyl disaster are detected at a nuclear power plant in Sweden, leading Soviet authorities to publicly announce the accident.

**Thursday** Speaking of Sweden, 3 years ago that country's officially account confirmed via Twitter that their signature dish, Swedish meatballs, actually originated in Turkey. 65 years before that, the first experimental 3D-TV broadcast ("Space Patrol") on ABC's L.A. affiliate KECA-TV.

**Friday** marks 124 years since J. J. Thomson of the Cavendish Laboratory announced his discovery of the electron as a subatomic particle, at a lecture at the Royal Institution in London. 97 years after that, CERN announced that the World Wide Web protocols will be free. On this day in 1939, NBC made the first public television broadcast in the US.

*Please join us who-knows-where? for AMW48: April 27–29 2022. Stay tuned to [www.amw.org](http://www.amw.org)  
Suggestions for speakers, participants, or session topics for AMW48: [chair@amw.org](mailto:chair@amw.org)*

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# AMW48

## The Forty-Eighth Asilomar Microcomputer Workshop

April 27-29, 2022

*“Don't Look Up - Look Out!”*

### Wednesday, April 27 (all times Pacific!)

**11:15am–ongoing: allow for COVID screening**

**1:15pm Zoom Starts Countdown Screen** A/V team

**1:30pm Pandemic Greetings, Call for Volunteers & Gifts**—Robert G. Kennedy III PE (hereinafter just “RGK3”), *Ultimax Group*, General Chair

**1:45-3:15pm Remembering Who We Lost** Lead: Brian Berg, *Berg Software Design*

- *in-person* Nick Nichols *Remembered by Brian Berg*
- *remote* Fred Clegg *Remembered by Chuck House*
- *pre-recorded* Irene Watson *Remembered by Fred Coury*
- *remote* Jane Sargent *Remembered by Ellen Cousins*
- *remote* Dave Wyland *Remembered by Mike Cheponis*
- *pre-recorded* Dave Hughes *Remembered by Dewayne Hendricks*
- *in-person* Jim Warren *Remembered by Brian Berg*

**3:15pm Break - Zoom has audience shot with countdown clock** A/V Team

**3:30pm Athematic Short Talks, Part I** Timekeeper: Ken Shoemaker, *Intel Corp. (retired)*

- *in-person* PCB Assembly at 1/100<sup>th</sup> the Cost: Tim Kay, *independent mind*
- *remote* Once and Future Gaming: Roy Harvey, *Electronic Arts*
- *remote* Large-Scale Heterogeneous SOCs: Mark Cummings, *Orchestral Networks*
- *remote* War vs. Energy Transition: Paul Monus, *retired BP*
- *in-person* Information Theory & Design of Programming Languages: Shevek. *Google*

**5:00pm social break and room check-in for In-Person participants**

**6:00pm Dinner**

**7:00pm Free-Form Random Access of Remote and In-Person (outdoor bar open to 10pm)**

**7:30pm Meet the 21! New Minds (21%!)**—RGK3, *Ultimax Group*, **elevator speeches by** (12 in-person, 6 remote, 2 drive-bys): Roger Andersson *in person*, Dan Armbrust *drive-by*, Charles Berret *in person*, Cassidy Cobbs *remote*, Robert Colwell *remote*, Debendra Das Sharma *drive-by*, Federico

Faggin, *remote*, Seth Elkin-Frankston *remote*, Tom Gardner *in person*, Meadhbh Hamrick *in person*, Roy Harvey *remote*, Tim Kay *remote*, Kurt Keville *in person*, Andrew Kirkpatrick *in person*, John Malczyk *remote*, Robert Rich *in person*, Marc Rogers *in person*, James Schalkwyk *in person*, Shevek *in person*, Vicky Tuite *in person*, Arthur Ulfeldt *in person*, Jack Weast *in person*

**8:00-9:45pm And Now for Something Completely Different** Lead: Brian Berg, *Berg Software Design*

- *in-person* Slow Music in a Manic World – A History of Deep Listening: Robert Rich, *Ambient & Electronic Musician*
- *in-person* The Film-Making Experience: Roberto Miller, *Pure Grain Digital Productions*
- *film screening via independent remote viewing & in-person viewing* **The Four Lives of Federico Faggin**
- *in-person (Roberto and Brian) & remote (Federico)* Film Discussion: Roberto Miller, *Pure Grain Digital Productions*; Federico Faggin, *author, inventor, Intel 4004 designer*; Brian Berg, *Berg Software Design*

## Thursday, April 28 (all times Pacific!)

**8:30am Athematic (Long) Talks, Part II** Timekeeper: Dennis Allison, *Stanford University*

- *in-person* Understanding Software Dynamics: Richard Sites, *independent mind*
- *in-person* A One-gram Interstellar Spacecraft: James Schalkwyk, *Breakthrough Initiatives*
- *flyby* Copackage Photonics: Andy Bechtolsheim, *CEO, Arista Networks*

**10:00am Break**

**10:15am Eponymous  $\mu$ Processor Super Session** Lead: Ken Shoemaker, *Intel Corp.(retired)*

- *drive-by* Enabling a Chiplet Ecosystem: Debendra Das Sharma, *Intel*
- *drive-by* Semiconductor Startup Challenges, part 1: Dan Armbrust, *Silicon Catalyst*
- *drive-by ditto*, part 2: Dan Armbrust, *Silicon Catalyst*

**12:00n Lunch**

**1:15pm Autonomous Vehicles!** Lead: Ken Shoemaker, *Intel Corp. (retired)*

- *in-person* The State of Makerspace Level Robotics: Kurt Keville, *MIT*
- *in-person* Everything You Know is Wrong: Brad Templeton, *robocars.com*
- *in-person* Why Autonomous Vehicles Aren't Going to Kill Us All: Jack Weast, *Intel/Mobileye*

**2:45pm ML & AI supersession + roundtable:** Lead: Dennis Allison, *Stanford University*

- *drive-by* Accelerated ML & Carbon: Decade of Lessons Learned: Dave Patterson, *Google*
- *flyby* extemporaneous remarks: Sean Lie, *Cerebras.net*
- *flyby* extemporaneous remarks: Peter Glaskowsky, *Esperanto Tech*

**4:45pm Break**

**5:00pm Trust is Just a Name on a Bank:** Lead: Ken Shoemaker, *Intel Corp. (retired)*

- *in-person* Hybrid Warfare: Marc Rogers, *Okta & Co-founder of The CTI League*
- *in-person* Evidence-Based Trust in Hardware – Precursor: Andrew “bunnie” Huang, *bunnie:studios*

**6:00pm Dinner**

**7:00pm This is your one chance to take a minute!**

**7:30pm Open Discussion: A Rich Asilomar Tradition** RAT Patroller: Kathleen Tuite, *ODK*  
*Ten-minute presentations on any subject you choose. Contact Kathleen immediately upon registration to request a time slot. All participants welcome! Everyone must sign up online ahead of time with title and correct name whether they’re in-person or not.*

<https://forms.gle/oiEUff7aBdJuDTGo8> *Don’t dawdle; slots get grabbed up fast!*

## **Friday, April 29 (all times Pacific!)**

**8:30am Panel: All This and World War III?** Moderator: Dennis Allison, *Stanford Univ.*

- *in-person* Gilmore’s Aphorism-Still Valid in the post-Ukraine World: Tim Požar, *TwoP*
- *pre-recorded* Arturo Filastò, *The Open Observatory of Network Interference (OONI)*, in discussion with Tim Požar, *TwoP*
- Panel Discussion:
  - *flyby* Herbert Lin, Fellow, *Hoover Institution on War, Revolution and Peace at Stanford University*
  - *flyby* Bruce Schneier, Fellow, *The Berkman-Klein Center For Internet & Society at Harvard University*
  - *in-person* Marc Rogers, *Okta & Co-founder of The CTI League*
  - *in-person* Paul Saffo, *Stanford University*
- *in-person* Can We Eliminate the .ru TLD – and Should We?: Paul Vixie, *AWS Security*

**10:30am Break**

**11:00am Orthogonal Shotgun: Ideas on Different Directions (à la Jim Warren)** Lead: Brian Berg, *Berg Software Design*

- *in-person* The Heritage of the “Orthogonal Shotgun”: Brian Berg, *Berg Software Design*
- *in-person* Repair the Climate by 2050!: David Henkel-Wallace, *Blue Dot Change*

**11:45am Thanks/Kudos, Call for Vols & Dols, What’s Coming @ AMW49 RGK3**

**12:00n Outdoor BBQ Lunch**

**1:30pm AMW48 Workshop Adjourns**

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A Zoom link to the Remote Workshop will be emailed out to all registrants

Thanks in particular to Tim Požar, Shevek and Tom Gardner for facilitation of this hybrid workshop!

AMW48 Organizing Committee		
Core Committee		Brain Trust
Dennis Allison	Marianne Mueller	Bob Cousins
Brian Berg	Tim Požar	Jie Qi
Mark Cummings	Ken Shoemaker	David S.H. Rosenthal
Janet Guns	Kathleen Tuite	Jen Snow
Dewayne Hendricks	<i>Peripheral Subcommittee</i>	<i>Emeritus Subcommittee</i>
Robert Kennedy	Bill Cheswick	Fred Clegg (RIP)
Bruce Koball	Mary Eisenhart	Fred Terman

General Chairs of Yore	
Ted Laliotis (RIP), 1975-1983	Allan Schiffman, 1984
John Wharton (RIP), 1985-1997	Brian Berg, 1998-2000
Mark Laubach, 2001	Mary Eisenhart, 2002-2005
Anne Mitchell, 2006-2007	Marianne Mueller, 2008-2016
Robert Kennedy, 2017-	

Program Chairs of Yore		
Fred Coury & Fred Clegg, 1975-1983	John Wharton (RIP), 1985-97, 1999-2017	Bob Wedig, 1998

**Wednesday** 501 years ago (1521): Ferdinand Magellan killed by natives at Battle of Mactan, Philippines.

36 years ago (1986): the Chernobyl Nuclear Power Plant Disaster occurred.

**Thursday** 75 years ago (1947): Thor Heyerdahl's *Kon-Tiki* set sail across the Pacific to prove a point.

**Friday** 30 years ago (1992): the start of the 1992 so-called "Rodney King riots" in Los Angeles, CA.

Please stay tuned to [www.AMW.org](http://www.AMW.org) for the 2023 dates of AMW49.

Suggestions for speakers, participants, or session topics for AMW49: [chair@AMW.org](mailto:chair@AMW.org)

# AMW49

## The Forty-Ninth Asilomar Microcomputer Workshop

April 26-28, 2023

[“It’s About Time, It’s About Space” \(TV Series Theme Song here\)](#)

### Wednesday, April 26 (all times Pacific!)

**11:30am–Workshop check-in & COVID self-testing with our kits** lend a hand if you can!

**1:00pm Zoom Starts Countdown Screen** – A/V team plays the 1960s comedy theme

**1:15pm Welcome** – “It’s About Time, It’s About Space” ‘Splained - **Call for Volunteers & Gifts**  
– Robert G. Kennedy III PE (hereinafter just “RGK3”), *Ultimax Group*, General Chair

**1:30pm Athematic Short Talks I** – Brian Berg, *Berg Software Design*, gavelmeister

- *in person* Shadowing Dark Caracal – Cooper Quintin, *EFF*
- *in-person I*, Inventor – Brent Yamashita, *DLA Piper*
- *remote* FT8: Disruptive Killer App Transforming Ham Radio – Bennett Smith, *PatentVentures*
- *in-person* Radio Free Milky Way – Ches, *retired*
- *in-person* Amateur Astrophotography – Hy Murveit, *as himself*

**3:00pm Short Break**

**3:15pm Athematic Short Talks II** – Brian Berg, *Berg Software Design*: gavelmeister

- *in-person* Spectre in the Rearview Mirror – Thaís Moreira Hamasaki @ *Intel*
- *in-person* Nuclear Notions – Christine Cockey, *Mistral Mountain*
- *remote* Current State of RNA/DNA Sequencing Technologies – Cassidy Cobbs, *Memorial Sloan-Kettering & Tennessee Valley Stellar Corporation, hereinafter, “Stellarcorp”*
- *in-person* An Anthropologist Looks at Debt – Meadhbh Hamrick, *Elsewhere, LLC*
- *in-person* Utah Computer Graphics Milestone – Brian Berg, *Berg Software Design*
- *in-person* Homage to Nick Tredennick – Brian Berg, *Berg Software Design*

**4:45pm Welcome Reception and Room Check-in for In-Person Participants**

**6:00pm Dinner** (Woodlands Dining–socially distant but still within range of lobbed dinner rolls)

**7:00pm Free-Form Random Access of Remote and In-Person (outdoor bar open to 10pm)**

**7:30pm Meet the 20 New Minds (20%!)** – RGK3, *Ultimax Group*, **elevator speeches by** (12 in-person, 8 remote) – Sabina Anja *in-person*, David Berger *remote*, Paul Borrill *remote*, Bob Brennan



*in-person*, Kerem Çamsarı *in-person*, Michael Frank *remote*, Henry McNeil *in-person*, Benjamin Mencer *in-person*, Thaís Moreira Hamasaki *in-person*, James Pack *in-person*, Kristin Paget *in-person*, Cooper Quintin *in-person*, Kim Scott *remote*, Ken Shirriff *remote*, Adam Shostack *in-person*, Zoya Slavina *remote*, Jonas Susaraba *remote*, Katarzyna Wac *remote*, Jennifer Wang *in-person*, Brent Yamashita *in-person*

**8:00-11:00pm Gordon Moore Retrospective** – Ken Shoemaker *retired Intel*, gavelmeister (note: *off-the-record rule may be suspended for this one session*)

- How It All Started – *in-person* Stan Mazor interviewed by Ken Shoemaker
- Impact of Moore’s Law on Technology – Panel moderated by Dennis Allison *in-person* Bill Davidow, *in person* James Harris, *in person* Uri Weiser
- AMW Goes to the Movies: Gordon Moore at EE380 – played by Dennis Allison

## Thursday, April 27 (all times Pacific!)

**7:30am–ongoing allow for COVID self-testing with our kits** lend a hand if you can!

**8:30am It’s About Time** – RGK3, *Institute for Interstellar Studies-US*, and *Stellarcorp*

- *remote* What Time Is It On The Moon? – T. Marshall Eubanks, *Space Initiatives Inc.*
- *in-person* Radioisotopes Я Us, Clocks, & Update on 1-g Interstellar Attoprobes– RGK3, *I4IS*
- *remote* Clock Coherence, from Terrestrial Microdatacenters to Interstellar Attoprobeswarms – Paul Borrill, *Dædælus*

**10:00am Long Break**

**10:30am Eponymous  $\mu$ Processor Session** – Ken Shoemaker, *retired Intel Corp.*

- *in-person* Open System Foundry, A New Approach – Bob Brennan, *Intel Foundry Services*
- *in-person* P-Bits: Between a Bit and a Qubit – Kerem Çamsarı, *UCSB*
- *in-person* Storage Technology Limits – Tom Coughlin, *IEEE*

**12:00 Lunch**

**1:00pm Mischief in the Modern World I: AI & ChatGPT** – Dennis Allison, *Stanford*: Lead

- *remote* Deep Learning Transformer Architectures – Katarzyna Wac, *Univ. Geneva*
- *remote* Does An AI Own the Fruits of Its Own Labor? – Zoya Slavina, *Univ. Bialystok*
- *remote* Gaming the Future – Christine Peterson, *Foresight Institute*
- *in-person* Threats from LLMs – Adam Shostack, *shostack.org*

**3:00pm Short Break**

**3:15pm Mischief in the Modern World II: Fakes & Crypto** – Dennis Allison, *Stanford*: Lead

- *in-person* (30 mins) Deep Fakes and Their Consequences – Benji Mencer, *UCSD*
- *Remote* (30 mins) Cyber War Games – Kim Scott, *Eleventen Solutions*
- *in-person* (45 mins) Crypto: My Part In Its Downfall – David S.H. Rosenthal, *retired*

**5:00pm Advance Planning for AMW50 / Reception for In-Person Participants**

**6:00pm Dinner**

**7:00pm This is your one chance to take a minute!**

**7:30pm Open Discussion: A Rich Asilomar Tradition** – Kathleen Tuite: RAT Patroller  
*Ten-minute presentations on any subject you choose. Contact Kathleen immediately upon registration to request a time slot. All participants welcome! Everyone must sign up online ahead of time, with their talk title and correct name whether they're in-person or remote.*  
<https://forms.gle/oiEUFf7aBdJuDTGo8> Don't dawdle; slots get grabbed up fast!

## **Friday, April 28 (all times Pacific!)**

**7:30am–ongoing allow for COVID self-testing with our kits**

**8:30am It's About Space: Hardware Trumps All** – Robert Kennedy, *Stellarcorp*: Lead

- *in-person* Progress Report on Methane Removal with ISA – Gumby, *Blue Dot Change*
- *in-person* Progress Report on the DpD – Dru Kirkpatrick, James Pack, RGK3, *Stellarcorp*

**9:30am Short Break**

**9:45am Three Views of the Future by Three Pauls** – RGK3, *Stellarcorp*: Moderator

- *remote* Apocalypse Now? – Paul Monus, *retired BP*
- *in-person* remarks – Paul Saffo, *Institute for the Future*
- *remote* extemporaneous remarks – Paul Vixie, *AWS Security*

**11:30am Thanks/Kudos, Call for Vols & Dols, What's Coming @ AMW50** – RGK3

**12:00n Checkout + Strike the Set!** – Shevek, Tim Požar, Tom Gardner, Rocky Mullins. Please help!

**1:00pm Outdoor BBQ Lunch & Group Photo** (weather permitting, served on the Fred Farr patio)

**2:00pm AMW49 Workshop Adjourns**

This hybrid event has been made possible by our remarkable A/V crew (Shevek, Tim, Tom, Rocky).  
A Zoom link to the Remote Workshop will be emailed to all registrants

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**Wednesday** 24 years ago: first known virus to target PC's flash BIOS, "CIH/Chernobyl" one of most destructive in history, triggers. 90 years ago today, the Gestapo was established. Earlier that year, so was the British Interplanetary Society. Go figure.

**Thursday** 42 years ago: Xerox introduced 8010 Star Information System, first commercial system utilizing a mouse. 232 years ago: telegraph inventor Samuel F.B. Morse (1791-1872) born in Charlestown, Mass.

**Friday** 20 years ago: Apple Computer launched iTunes Music Store, selling music for 99¢ a song; changed music industry forever. 50 years ago: Pink Floyd's *The Dark Side of the Moon* hit #1 on Billboard's Top 200 LPs, and it was on this chart for a record 978 weeks.

Please join us for **AMW50!** April 24-26, 2024

Suggestions for speakers, participants, or session topics for AMW50: [chair@AMW.org](mailto:chair@AMW.org)

<b>AMW49 Organizing Committee</b>		
<i>Core Committee</i>		<i>Brain Trust</i>
Dennis Allison	Marianne Mueller	Bill Cheswick
Brian Berg	Tim Požar	Bob Cousins
Mark Cummings	Ken Shoemaker	Jie Qi
Tom Gardner	Shevek	David S.H. Rosenthal
Janet Guns	Kathleen Tuite	Bruce Koball
Dewayne Hendricks	<i>Peripheral Subcommittee</i>	<i>Emeritus Subcommittee</i>
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<b>General Chairs of Yore</b>	
Ted Laliotis (RIP), 1975-1983	Allan Schiffman, 1984
John Wharton (RIP), 1985-1997	Brian Berg, 1998-2000
Mark Laubach, 2001	Mary Eisenhart, 2002-2005
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Robert Kennedy, 2017-	

<b>Program Chairs of Yore</b>		
Fred Coury & Fred Clegg (RIP)	John Wharton (RIP), 1985-97, 1999-2017	Bob Wedig, 1998

