#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)

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

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.

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 the 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 <u>Popular Electronics</u>, and the newly available "Apple" kits.
- There was no Internet, just the ARPAnet. Telephone communication was over an IBM *300 baud* modem.

- 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....
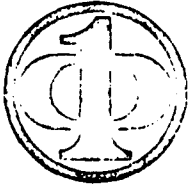
IEEE COMPUTER SOCIETY

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.

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
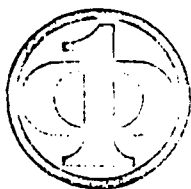
IEEE COMPUTER SOCIETY

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

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

IEEE COMPUTER SOCIETY

ASILOMAR WORKSHOP

on
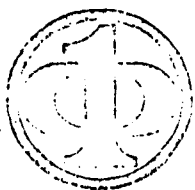
ADVANCED ARCHITECTURE AND APPLICATIONS OF MICROCOMPUTERS

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   Program Co-Chairman

Fred Coury, Coury Associates   Fred Clegg, University of Santa Clara

Registration Chairman   Local Arrangements

Don Senzig, Hewlett-Packard   Fred Terman, Stanford University

ASILOMAR WORKSHOP

ON

ADVANCED ARCHITECTURE

AND

APPLICATIONS OF MICROCOMPUTERS

April 30 – May 2, 1975

PROGRAM COMMITTEE

General Chairman
Ted Laliotis, Fairchild Systems Technology

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Don Senzig, Hewlett-Packard   Fred Terman, Stanford University

Session I Strengths and limitations of current microprocessors from the
Wed. p.m. 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 Multiple microprocessors
Wed. eve. 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^2L 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

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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 the "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 Laboratores, 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 Torenson, 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 peripherials 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: <u>EDUCATION</u>
                             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: <u>ARCHITECTURE AND TECHNOLOGY</u>
                             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: <u>SOCIETY</u>
                             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: <u>SOFTWARE & DESIGN TECHNIQUES</u>
                             Moderator: Van Whitis, 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: <u>OPEN SESSION</u>
                             Moderator: Fred Coury

SESSION VI   Friday 8:30 AM   Topic: <u>APPLICATIONS</u>
                             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, hobbiest,
business, communications, control, instrumentation, multi-micro and other fields.

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 Microprocessor 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, Ziatech, 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; "Micro-
    processors 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)

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

IEEE COMPUTER SOCIETY

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
              "ν-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"
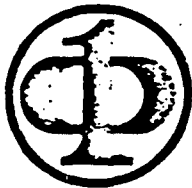
IEEE COMPUTER SOCIETY

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"

IEEE COMPUTER SOCIETY   SIXTH ANNUAL ASILOMAR MICROCOMPUTER WORKSHOP

April 23 - 25, 1980

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 Paull, 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 fo 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 Ravnel, 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

SESSION I.   <u>Technology</u>   (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.   <u>Architectures</u>   (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.   <u>Software</u>   (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".

PROGRAM COMMITTEE

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 Pavenel	* Language Resources
Peter Verhofstadt	* Fairchild
John Wakerly	Consultant

* denotes Session Chairman

FWC
21 Apr 1981

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 Rehabilitaion 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 Langages 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 Lincon 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 you piece.

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

Chairperson: Tom Whitney, Melchor Venture Management

- Dave Farber, Electrical Engineering Department, University of Deleware

- 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*

- Jeb 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 Softwear 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 Bechtolsheim, 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 Prothesisl*

- Ted Adams, Medtronics *A Portable Heart Monitoring and Recording System*

- Kris Brown, Lucasfilm *The Use of Microcomuters 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

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 Z800000, 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   ASµPs: Application-Specific Microprocessors
Bruce R. Koball, Motion West - Chairman

- The µPD78312 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

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.

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

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. Steuart 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 μC 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*
- μCode 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, Triskaidekagraphobia, etc.

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	

Fourteenth Annual Asilomar Microcomputer Workshop
April 27–29, 1988

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 Gruliow, *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, *Axlon*
  Robots in the Office of the Future

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 µP Device Architecture, Michael Slater, *MicroDesign Resources* – Chair
- Robert Garner, *Sun Microsystems*
  SPARC and the Future Directions of µP 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 µP 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 Stritter, *MIPS Computer Systems*

7:00-11:00pm+ Open Discussion: *A Rich Asilomar Tradition*
Jesse Jenkins, *Signetics* – 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

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

Fifteenth Annual Asilomar Microcomputer Workshop
April 26–28, 1989

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, *Golemics, Inc.*
- Mary Eisenhart, *MicroTimes*
- Gary Chapman, *CPSR*

12:30-2:30pm **Lunch and Informal Discussion**
Barbeque/Picnic Area

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	

Sixteenth Annual Asilomar Microcomputer Workshop
April 18-20, 1990

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/Cygnet 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, *Golemics, 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*

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	

Seventeenth Annual Asilomar Microcomputer Workshop

April 24–26, 1991

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

The Eighteenth Annual Asilomar Microcomputer Workshop

April 22–24, 1992

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 F/X*
  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*
  Microkernals: 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**

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

The Nineteenth Annual Asilomar Microcomputer Workshop

April 28-30, 1993

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. Lentczner, *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 Uschersohn, *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.)

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

The Twentieth Annual Asilomar Microcomputer Workshop

April 20–22, 1994

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)

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

The Twenty-First Annual Asilomar Microcomputer Workshop

April 19–21, 1995

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 Ultimax 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...)

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	

The Twenty-Second Asilomar Microcomputer Workshop

April 17–19, 1996

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 Mpact 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 μP 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...)**

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

The Twenty-Third Asilomar Microcomputer Workshop

April 16–18, 1997

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

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

NetSource/Scruz-Net: The Official ISP of the Asilomar Microcomputer Workshop

The Twenty-Fourth Asilomar Microcomputer Workshop

April 22–24, 1998

Wednesday, April 22

1:30pm **Opening Remarks** – Brian Berg, *Berg Software Design,* General Chair
Bob Wedig, *Wedig Consulting*, Program Chair

1:45pm **Palm is My Pilot** – Stan Mazor, *BEA Systems*, Chair
- The Thoughts of a Recovering OS Addict
Brian Dougherty, *Wink Communications*
- More Fun Things to Do with a Palm Pilot
Ian Goldberg, *UC Berkeley*
- Java in Tight Spaces: Shoehorning to the Palm Pilot
Richard Ross, *TeleMedia Devices*

3:15pm **Break**

3:30pm **Tales from the Crypto** – Marianne Mueller, *Sun Microsystems/JavaSoft*, Chair
- Making Cryptography a Little Less Cryptic
Marianne Mueller, *Sun Microsystems/JavaSoft*
- Renting Your Soul to the Devil: How a Crypto Geek Became a Policy Geek and Back Again
Matt Blaze, *AT&T Labs-Research*
- Permissive Action Links
Steve Bellovin, *AT&T Labs-Research*
- Key Cracking and Cryptanalysis for Fun and Profit
Ian Goldberg, *UC Berkeley*

5:15pm **Reception and Dinner**

7:30pm **Athematic Short Talks** – Bob Wedig, *Wedig Consulting,* Chair
- 1394 as a Multimedia Infrastructure, or The Demise of USB
Gary Hoffman, *Consultant*
- Technology Alternatives for Software Defined Radio
Mark Cummings, *enVia, Inc.*
- Designing Technomadic Systems
Steve Roberts, *Nomadic Research Labs*

- Mining and Extracting Maximum Value from Your IP Assets
Irv Rappaport, *SmartPatents, Inc.*
- Technology and Sociology
Marty Graham, *UC Berkeley*
- The Chip that Wouldn't Die
John Wharton, *Applications Research*
- The iButton with Java: A non-Card Java Card
Don Loomis, *Dallas Semiconductor*

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**

Program Committee

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

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

The Twenty-Fifth Asilomar Microcomputer Workshop

April 21–23, 01999

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

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 Hamburgen, *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**

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

THE TWENTY-SEVENTH ASILOMAR MICROCOMPUTER WORKSHOP

2001:
a tech odyssey

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*

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**

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

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.

The Twenty-Eighth Asilomar Microcomputer Workshop

April 24 – 26, 2002

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 **Athematic 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**

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

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.

The Twenty-Ninth Asilomar Microcomputer Workshop

April 23 – 25, 2003

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, *Syngenesis*

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, *Golemics, Inc.*
- Wireless in Remote Areas
  Dave Hughes, *Old Colorado City Communications*

5:00pm **Reception and Dinner**

7:30pm **Athematic 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**

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

The Thirtieth Asilomar Microcomputer Workshop
April 28 – 30, 2004

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

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.

The Thirty-First Asilomar Microcomputer Workshop

April 20 – 22, 2005

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

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 **Athematic 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**

Program Committee

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

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

The Thirty-Second Asilomar Microcomputer Workshop

April 19–21, 2006

(Motto: "Who'd'a ever thought we'd overflow five bits?!?")

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 Geldman, 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**

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

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

The Thirty-Third Asilomar Microcomputer Workshop

April 18–20, 2007

(Motto: Best. Multi-Radix-Palindrome Year. <u>Ever</u>*! †)*

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**

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.

The Thirty-Fourth Asilomar Microcomputer Workshop

April 16–18, 2008

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

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**[†] – 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!
Dewayne 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. / Gatespeed 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 Arianne Range Safety Officer volunteers††**
(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**

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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† 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.

†† Vandenberg AFB has agreed to launch a spare Arianne 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.

The Thirty-Fifth Asilomar Microcomputer Workshop
April 15 – 17, 2009
(Motto: Flat is the New UP!)

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[†]
  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 <u>Else</u> 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
  Dewayne 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 <u>Not</u> 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 Orlowski, *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 <u>Rich</u> 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 Orlowski, *The Register*

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

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

1:45pm   **Workshop Adjourns**

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.

The Thirty-Sixth Asilomar Microcomputer Workshop
April 28 – 30, 2010
(Motto: Hitting the Wall)

Wednesday, April 28

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

1:45pm   **Obstacles on the Road to Data Integrity** – Brian A. Berg, Berg Software Design, *Chair*
- Tom Coughlin, Coughlin Associates: *Reliability and Recovery: How Can We Make Better Storage Devices?*
- David Rosenthal, Stanford University Libraries: *Storing Bits: How Hard Can It Be?*
- Suzanne Fischer, The Henry Ford: *Digital Preservation at Cultural Institutions*

3:15pm   **Break**

3:45pm   **Towards Programmable Biology** – Christine Peterson, Foresight Institute, *Chair*
- Kay Aull, DIYbio: *Is Life Hackable? Postcards from the Edge of Synthetic Biology and DIY Bio*
- Mike West, BioTime, Inc.: *Immortal Cells: The Prospect of Regenerative Medicine*

4:45pm   **Three Freds and a Ted and an Ed** – **Ed Roberts and AMW** –
Brian A. Berg, Berg Software Design, *Chair*
- Fred Terman, Naval Postgraduate School
- Fred Clegg, Clegg Flight Instruction
- Carl Helmers, helmers.com
- Lee Felsenstein, Fonly, LLC

5:15pm   **Reception and Dinner**

7:30pm   **Athematic Short Talks** – Bob Wedig, Wedig Consulting, Inc., *Chair*
- Mark Klein, IMMI: *Big Brother Is In Your Pocket And He Knows What You Are Watching*
- Tone Norloff, Tekna: *Improving the Daily Commute: Public Transport in the Oslo Area*
- Warren Stringer, Muse.com: *Yo (Why Twitter is Too Verbose)*
- Robert Kennedy, The Ultimax Group, Inc.: *The Real Goldeneye*

- David Shier, CK Technologies, Inc.: *Harnessing Computer Technology to Modernize Wire Harness Testing*
- Clark Dodsworth, Osage Associates: *Context is King*
- Sarah Gvestvang: *Let Kids Blow Things Up*
- Tom Rolander, Crossloop, Inc.: *An Old EE Has 15 Minutes to Inspire New EE Grads*

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 <u>Rich</u> 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
- Gather at northwestern tide pools (*BTW BYO iPad*)

8:30am **Science of Green** – Lorette Cheswick, cheswick.com, *Chair*
- Marianne Mueller, mrm consulting: *Science of Soil*
- Lorette Cheswick, 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**

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

Special thanks to Etón Corp. (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!

The Thirty-Seventh Asilomar Microcomputer Workshop

April 27-29, 2011

(Motto: Where Has All the Hardware Gone?)

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 21st 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**

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.

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.

The Thirty-Eighth Asilomar Microcomputer Workshop

April 25-27, 2012

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

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 <u>*Real*</u> Mothers of Invention?** – Bill Cheswick, *Looking*, Moderator [†††]
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**

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

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.

[†] 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.

[††] 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.

[†††] 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.

The Thirty-Ninth Asilomar Microcomputer Workshop

April 24-26, 2013

(Motto: Crowdsourcing microprocessors since 1975!)

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, *9th 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**

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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	Stan Mazor	David Weekly
John Feland	Anne Mitchell	John Wharton
	Marianne Mueller	

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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.

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† 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

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

Athematic 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...)

AMW40

The 40th Asilomar Microcomputer Workshop

April 23-25, 2014

Motto: Data has <u>Always</u> been Big – It's the <u>Bits</u> that have gotten Small †

<u>Wednesday, April 23</u>

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††, *Fonly, 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 <u>Rich</u> 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)*

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>

AMW41

The 41st Asilomar Microcomputer Workshop

April 15-17, 2015

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

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 Thangs – 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**

Thursday, April 16

8:15am   **The Changing Face of Embedded Applications** – John Wharton, *Applications Research*, Session Chair
- Eight-Bit µCs 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 <u>Rich</u> 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.
    <u>Warning</u>: Some time-slot shrinkage may occur as the witching hour draws nigh.*

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.
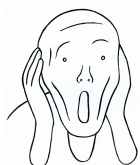   *Opening remarks followed by group discussion.*
    • Internet and Computer Security: I Think We Are Going to Win
       Bill Cheswick, *University of Pennsylvania*
    • The Future of Imagination: How Can We Ensure Creativity in an Increasingly
        Digital World? – Charlotte Lowe, *Writer and Poet*
    • 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**

Program Committee

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

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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 >

AMW42

The 42nd Asilomar Microcomputer Workshop

May 4-6, 2016

Motto: "Can We Really Be The Answer?"

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^{26} *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^{26} *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**

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 > 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>
& Thanks for Coming!

AMW43

The 43rd Asilomar Microcomputer Workshop

April 19-21, 2017

Motto: "43rd Time's a Charm!" -or- "Oui, Robots!"

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 SHAKEY: 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*[†]

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 <u>*Rich*</u> 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!
  <u>Warning</u>: 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**††

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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†Maj. Jennifer Snow has asked to be identified as "JJ Snow, Geek Gamer Girl and Friendly Fed".

††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!

AMW44

The 44th Asilomar Microcomputer Workshop

April 25-27, 2018

Motto: "It's Always Raining Stone Soup Here"

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 μProcessor Session: Smeltredown & 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 Tsolis, *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	*Peripheral Committee*
	Bill Cheswick
Brian A. Berg	Anne P. Mitchell
Mary Eisenhart	John Wharton
Janet Guns	
Dewayne Hendricks	*Brain Trust*
Robert Kennedy	Bob Cousins
Bruce Koball	David S.H. Rosenthal
Marianne Mueller	
Tim Pozar	*Emeritus Committee*
Ken Shoemaker	Fred Clegg
	Fred Terman

_____

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

& Thanks for Coming!

AMW45

The Forty-Fifth Asilomar Microcomputer Workshop

Lunar Reconnaissance Orbiter Moonlight

April 24-26, 2019

Chiaroscuro Motto: "Via Silicon Dioxide Darkly"

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-gavel*meister*
• 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-Gavel*meister*
• 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.*, gavel*meister*
- 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) µProcessor 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 <u>Rich</u> 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! <u>Warning</u>: 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**

AMW45 Organizing Committee

Core Committee	*Peripheral Subcommittee*
Brian Berg	Bill Cheswick
Mark Cummings	Mary Eisenhart
Janet Guns	*Brain Trust*
Dewayne Hendricks	Bob Cousins
Robert Kennedy	David S.H. Rosenthal
Bruce Koball	Jen Snow
Marianne Mueller	Dennis Allison
Tim Pozar	
Jie Qi	*Emeritus Subcommittee*
Ken Shoemaker	Fred Clegg
Kathleen Tuite	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

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
Suggestions for speakers, participants, or session topics for AMW46: *chair@amw.org*

AMW47

The Forty-Seventh Asilomar Microcomputer hypoWorkshop

April 28-30, 2021

Pedal to the Zoom! | *ne virus gerunt in vobis*

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 <u>Rich</u> 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 geoengineers, *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 **A**llison, *emcee-impresario, EE 380, Stanford University*
• The Good and Bad of Additive Manufacturing–**M**ary Baker, *HP, Inc.*
• The Doctor Will Hear You Now–David **W**eekly, *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	*Peripheral Subcommittee*
Brian Berg	Bill Cheswick
Mark Cummings	Mary Eisenhart
Janet Guns	*Brain Trust*
Dewayne Hendricks	Bob Cousins
Robert Kennedy	David S.H. Rosenthal
Bruce Koball	Jen Snow
Marianne Mueller	Dennis Allison
Tim Pozar	
Jie Qi	*Emeritus Subcommittee*
Ken Shoemaker	Fred Clegg
Kathleen Tuite	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 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
Suggestions for speakers, participants, or session topics for AMW48: ***chair@amw.org***

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 1/100th 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 µProcessor 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

Revised "As Built"

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!

Revised "As Built"

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	*Peripheral Subcommittee*	*Emeritus Subcommittee*
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 for the 2023 dates of AMW49.
Suggestions for speakers, participants, or session topics for AMW49: chair@AMW.org

Revised "As Built"

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*, gavel**meister**

- *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*: gavel**meister**

- *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*, gavel***meister*** *(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 µProcessor 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 <u>*Rich*</u> 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

AMW49 Organizing Committee		
Core Committee		*Brain Trust*
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	*Peripheral Subcommittee*	*Emeritus Subcommittee*
Robert Kennedy	Mary Eisenhart	Fred Terman

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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 (RIP)	John Wharton (RIP), 1985-97, 1999-2017	Bob Wedig, 1998

AMW50

The Fiftieth Asilomar Microcomputer Workshop
April 24-26, 2024

AMW@50: What a Long, Great Trip It's Been!

Wednesday, April 24 (All times Pacific; we will adhere to the times shown)

1:30-1:45pm: Welcome to AMW50
- *on-site* Welcome to AMW50 - Tim Požar, *TwoP LLC*

1:45-3pm: A Retrospective of Our First 49 Workshops – Brian Berg, *Berg Software Design*; Fred Coury, *Consultant*
- 1:45 *on-site* AMW50 Retrospective: Introduction - Brian Berg, *Berg Software Design*
- 1:47 *on-site* In 1975, What Were We Thinking? - Fred Coury, *Consultant*
- 1:55 *on-site* Remembering Fred Terman - Nan Borreson, *self*
- 2 pm *remote* Remembering John Walker - Mary Eisenhart, *self*
- 2:05 *remote* Memories of AMW #1, Part 1 - Edward Miller, *self*
- 2:10 *remote* Memories of AMW #1, Part 2 - Jim Toreson, *Toreson Industries*
- 2:15 *on-site* 1984: The End of AMW? - Allan Schiffman, *CommerceNet*
- 2:20 *on-site* AMW's First 49 Workshops: What a Long, Great Trip It's Been! - Brian Berg & Fred Coury
- 2:45 *on-site* Gary Kildall, AMW, and CP/M - David Laws, *self*

3-3:15pm: Break

3:15-4:45pm: Eponymous μProcessor Session, Part 1 – Thaís "barbie" Moreira Hamasaki, *Intel Corp.*
- *remote* All Models are Uncertain - Prof. Gianluca Iaccarino, *Stanford University*
- *on-site* The Road to Rowhammer - What Led to the Ability to Exploit a So-Called "Reliability Issue" as a Security Vulnerability? - Thomas Dullien, *Independent*
- *on-site* From PKI to Quantum Walls: Evolving HSMs for a Borderless World - Henrique Kawakami, *Intel Corp.*

4:45-5pm: Meet the New Minds! *First-timers should briefly introduce themselves. In-person attendees: come to the podium. Remote attendees: raise your Zoom hand and wait to be called on.*

5-6pm: Reception [Sponsor: Nancy Blachman, Founder, *Julia Robinson Mathematics Festival* (jrmf.org) and Board, *G4G*]

6-7:30pm: Dinner

7:30pm: Athematic Short Talks (20 minutes/speaker, incl. intro and Q&A) – Ken Shoemaker, *Intel Corp. (retired)*
- *on-site* Prisoner's Dilemma: Testing AI/ML & GenAI on an Extremely Human Problem - Brandon Holland & Jaden Cohen
- *on-site* Exploring the Challenge of Recursivity in AI Systems: Implications for International Conflict - Zoya Slavina, *University of Białystok*
- *on-site* Slicing Interactive Software to Make Playable Quotes - Adam Smith, *UC Santa Cruz* & Joël Franušić, *Independent*

- *on-site* Building the World's First Computer: Charles Babbage's Analytical Engine - Len Shustek, Founding Chairman Emeritus, *Computer History Museum*
- *on-site* The Secret History of Adoption - Nancy Blachman, *Julia Robinson Mathematics Festival* and *G4G*
- *on-site* Computation, Creative Tools & Empowerment - Paula Te, *Chibitronics* & Jennifer Jacobs, *UC Santa Barbara*
- *on-site* Large Language Models on Commodity Processors - Brian Case, *Esperanto Technologies*
- *on-site* Digital Emblem - Bill Woodcock, *Packet Clearing House*
- *remote* TamaGo: Open Source Secure Firmware - Andrea Barisani, *WithSecure / F-Secure*

Thursday, April 25 (All Times Pacific!)

8:15-9:45am: Eponymous μProcessor Session, Part 2 – Thaís "barbie" Moreira Hamasaki, *Intel Corp.*
- *remote* Chiplets: On-Package Interconnects for Generative AI and Beyond - Debendra Das Sharma, *Intel Corp.*
- *remote* CHERI: Deterministic and Pragmatic Memory Safety - John Baldwin, *Ararat River Consulting, LLC*
- *on-site* X86S: Gently Shedding Obsolete Legacy in a Widely Used ISA - Andi Kleen, *Intel Corp.*

9:45-10am: Break

10am-Noon: Big Data, Graphics, and Visualization – Eric Allman, *UC Berkeley - retired*
- *on-site* Evolution of data center networks at Google - Leon Poutievski, *Google*
- *on-site* Pixel-Adaptive Visual Comparison Between Many Phylogenetic Trees - Tamara Munzner, *Univ. of British Columbia, Dept. of Computer Science*
- *on-site* The Next Frontier of Spatial Transcriptomics - Single Molecule Imaging - Cassidy Cobbs, *Memorial Sloan Kettering Cancer Center*
- *remote* Building Cloud Storage for Netflix Studios - Tejas Chopra, *Netflix Studios*

Noon-1:30pm: Lunch

1:30-2:30pm: Keynote: The Microprocessor – Mark Cummings, *S2-D2*
- *on-site* The Microprocessor: Yesterday and Tomorrow - Yale Patt, *The University of Texas at Austin*

2:30-2:45pm: Break

2:45-4:45pm: History & Future of Computer Architecture - Mark Cummings, *S2-D2*
- *on-site* Oceanum Computa - Michael Shebanow, *Sapeon*
- *on-site* Improving Throughput Tolerating Latencies with Parallelism - HPS/OoO, IMPACT/ILP, and GPUs - Wen-mei Hwu, *NVIDIA*
- *on-site* Memory-Centric Computing: Opportunities and Challenges - Onur Mutlu, *ETH Zurich, Stanford University*
- *on-site* Superconducting Quantum Computing - Wei-Ti Liu, *Quantum Technology, LLC*

4:45-6pm: Reception

6-7:30pm: Dinner

7:30pm-??: Open Discussion: A *Rich* Asilomar Tradition - Fred Coury, *Consultant*; Kathleen Tuite, *GetODK*
- *on-site* RATS - RAT Patrollers: Fred Coury: Gavelmeister; Kathleen Tuite: Scheduler

Friday, April 26 (All Times Pacific!)

8:30-10am: Business, History, and Strategy - Brian Berg, *Berg Software Design*
- *on-site* OpenWater's Technology & Strategy - Mary Lou Jepsen, *OpenWater*
- *on-site* The History of Pixar - Alvy Ray Smith, *Author and Consultant*
- *drive-by* NVIDIA: How to be an Overnight Success in 30 Years - Chris Malachowsky, *NVIDIA*, interviewed by David S.H. Rosenthal

10-10:15am: Break (Room Checkout; turn in your room key at the front of the meeting room)

10:15-11:45am: Athematic Wrap-up - *remote* Dewayne Hendricks, *Tetherless Access*
- *remote* A Funny Thing Happened on the Way to the Commons - Isaac Wonder, *self*
- *remote* What Can We Learn from Robotics, Cybernetics, and AI Systems, and Apply to Cybersecurity? - Désiré Banse, *IdeaCrew*
- *remote* Responding to the Dance of the Cannibal, *aka* Wetiko - Andrew Maffei, *self*

11:45am-Noon: Workshop Wrap-Up/Thanks/Kudos - <u>Attendee Assistance Needed for A/V Equipment Breakdown!</u>

Noon-2pm: Outdoor BBQ Lunch (weather permitting)   *Thanks to No Starch Press for the Whiskey Glass Freebie!*

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Organizing Committee

Eric Allman	Jie Qi
Dennis Allison	David S H Rosenthal
Sabina Anja	Shevek
Brian Berg	Ken Shoemaker
Mark Cummings	Kathleen Tuite
Mary Eisenhart	
Jim Fenton	
Janet Guns	*<u>Thanks to the Brain Trust:</u>*
Thaís Moreira Hamasaki	Bill Cheswick
Dewayne Hendricks	Bruce Koball
Tim Požar	Robert G Kennedy III

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April 24 Anniversaries:
- 127 years ago – Benjamin Lee Whorf, linguist and engineer, is born
- 110 years ago – Franck-Hertz experiment, a pillar of quantum mechanics, is presented to the German Physical Society: https://en.wikipedia.org/wiki/Franck%E2%80%93Hertz_experiment
- 86 years ago – Roger Boisjoly, Challenger disaster whistleblower and engineer, is born
- 57 years ago – Vladimir Komorov, cosmonaut and engineer, dies in the crash of Soyuz 1

April 25 Anniversaries:
- 71 years ago – James Watson and Francis Crick described the double helix structure of DNA
- 70 years ago – Bell Lab publicly demonstrated the first practical solar cell
- 63 years ago – Robert Noyce is granted US Patent No. 2,981,877 for an integrated circuit employing a planar process

Apr 26 Anniversaries:
- 62 years ago – NASA's Ranger 4 crashes into Moon; UK launches first satellite Ariel 1
- 24 years ago – World Intellectual Property Day was first observed for awareness of patents, copyrights, trademarks, designs

Bios of AMW Speakers and Session Chairs

Adam Smith is a lifelong recreational programmer and career academic. His Design Reasoning Lab at UC Santa Cruz applies artificial intelligence methods to the development of tools for creating, maintaining, interpreting, archiving, and transmitting meaningful moments of interaction with media like video games and mobile apps.

Allan Schiffman modeled KL's future highway traffic for the ADB, designed microprocessors for Fairchild Semiconductor, assassinated products for Schlumberger, made Smalltalk-80 go fast for PARC & ParcPlace, designed two losing COMSEC protocols, and founded four internet-oriented companies (all having decent exits). Having attended SUNY, Nanyang, SJSU, Stanford, CMU, and Cambridge, he wants to be remembered for dynamic code translation, polymorphic in-line caching, and algorithm negotiation in crypto protocols. He now applies AI to medicine at CommerceNet.

Alvy Ray Smith co-founded Pixar and Altamira Software. He was the first Director of Computer Graphics at Lucasfilm, and the first Graphics Fellow at Microsoft. He has received two technical Academy Awards for contributions to digital movie-making technology, and he is author of *A Biography of the Pixel*.

Andi Kleen is an engineer at Intel working on ISA and performance. He is a long-term Linux kernel contributor who worked on many different areas including the original 64bit x86 port. He is located in Portland Oregon and enjoys reading and hiking.

Andrea Barisani is an internationally recognized security researcher. Since owning his first Commodore-64 he has never stopped studying new technologies, developing unconventional attack vectors and exploring what makes things tick...and break. His experience builds on large-scale infrastructure defense, penetration testing and code auditing with particular focus on safety critical environments, with more than 15 years of professional experience in security consulting. His main focus lies on the convergence between secure hardware and software, an interest consolidated in the authorship of the USB armory hardware project and the TamaGo bare metal framework. He is a well-known international speaker, having presented at BlackHat, CanSecWest, Chaos Communication Congress, DEFCON, Hack In The Box, among many other conferences, speaking about innovative research on automotive hacking, side-channel attacks, payment systems, embedded system security and many other topics.

Andrew Maffei worked his way through several different technical roles at the Woods Hole Oceanographic Institution over his 40+ years there. It truly was a playground for him as he helped scientists study the oceans. Towards the end of his tenure, as a member of the senior technical staff, he turned towards leading efforts in ocean data science, ontologies, and informatics. Outside of WHOI, for 15+ years, he pursued a peculiar, unshakable, obsession in studying Double Entry Bookkeeping and how it might be used in non-financial applications.

Bill Woodcock is the executive director of Packet Clearing House, the intergovernmental treaty organization that builds and supports critical Internet infrastructure, including Internet exchange points and the core of the domain name system. Bill is on the boards of the Quad9 Foundation and the M3AA Foundation. Now, Bill's work focuses principally on the security and economic stability of critical Internet infrastructure.

Brandon Holland is a High School Junior, and in love with all parts of STEM. He has been to Defcon since the age of 8, and has won multiple competitions. Brandon has presented at conferences on his experiences at Defcon and on how his generation interacts with technology.

Brian Berg has been consulting for over 40 years, specializing in data storage including flash memory. His AMW attendance since 1987 has expanded his circle of friends and knowledge base. His IEEE officer activities include IEEE Milestones, and he has proposed and/or officiated for over 2 dozen of these including SHAKEY the Robot (SRI), Computer Graphics and Visualization (the Univ. of Utah), RenderMan (Pixar), and CP/M (as MC for its dedication following AMW in 2014, with David Laws as its proposer). He is currently working on the May dedications of 6 Milestones: at PARC (Alto computer, Laser Printer, Ethernet) and Stanford (TCP/Internet, IEEE 802 Standards Committee, PageRank & the Birth of Google). He is a member of the AMW Program Committee.

Brian Case started in computers in 1975 with an Altair 8800 kit. At AMW, he met Michael Slater, founder of *Microprocessor Report,* and he joined as Contributing Editor. At AMD, he co-architected the Am29000 early RISC uP, and wrote the chip's first optimizing C compiler. He has worked for many Valley companies and is currently at Esperanto Technologies.

Cassidy Cobbs is an evolutionary biologist by training currently serving as the Scientific Liaison for the Integrated Genomics Operation at Memorial Sloan Kettering Cancer Center, a position which is light on evolution, heavy on molecular biology, and provides access to all the latest and coolest tech in the field. They live in NYC with the dumbest pit bull to ever walk the streets of Manhattan.

Chris Malachowsky with Curtis Priem, designed Sun's GX graphics accelerators. In 1993 they left Sun, joining Jensen Huang to found NVIDIA. In the 30 years since, he has led, among others, numerous organizations, including engineering, IT, operations, and most recently, research. He is an NVIDIA Fellow, a member of the executive staff, and basically a free agent with no operational responsibilities.

David Laws retired from the furnaces of Silicon Valley, and is now in Carmel Valley. He photographs, writes, and presents on high-tech history, gardens, and travel. His work has appeared in electronic, print, and video media for the BBC and NPR, as well as in guide books, newspapers, magazines, and academic journals. He wrote the IEEE Milestone proposal for *The CP/M Microcomputer Operating System, 1974*, whose bronze plaque is at the DRI HQ site at 801 Lighthouse Ave, Pacific Grove (in the sidewalk), and which was dedicated following AMW #40 in 2014.

David S.H. Rosenthal has been writing programs since 1965, including as a Distinguished Engineer at Sun Microsystems, employee #4 at NVIDIA, and co-founder of the LOCKSS Program at the Stanford Libraries. He is a member of the AMW Program Committee.

Debendra Das Sharma is an Intel Senior Fellow, and co-General Manager of the Memory and I/O Technologies, Data Platforms, and Artificial Intelligence Group, at Intel. He leads PCI-Express, Compute Express Link, and UCIe interconnect efforts.

Désiré Banse is a cybersecurity executive at a health IT company in Washington DC, with expertise in compliance, cloud security, infrastructure. He is a former researcher at NIST and has worked on Artificial Intelligence, Robotics, Internet. In his spare time, he teaches how to build aerial platforms to schools and USMC recruits.

Edward Miller got his PhD in 1968, and worked at General Research and Science Applications on various DoD assignments. He changed course in 1977 and started Software Research, which focused on software quality issues. He grew the firm to 35 people, organized 20 annual Quality Week events, and built the TestWorks and eValid products. He holds 10 US patents, and he and his wife Rita Bral live in San Francisco and Leuven, Belgium.

Eric Allman created *sendmail*, one of the Internet's first Mail Transfer Agents, and *syslog*, the de facto standard logging mechanism used in nearly all open systems and peripherals. He was Lead Programmer on the INGRES relational database management project, made significant contributions to the Berkeley Software Distribution, and authored the UNIX version of the Star Trek game. Eric worked on database interfaces at Britton Lee, neural networks at the International Computer Science Institute, and shared computing and storage infrastructure at UC Berkeley. He co-founded Sendmail, Inc. and served as its CTO. Eric has been on the boards of USENIX Association, Sendmail, Cal Performances, ACM, and the Berkeley Hillside Club, and he is currently the President of the Berkeley Historic Building Fund. Although officially retired, he still seems to work all the time. He is a member of the AMW Program Committee.

Fred Coury attended the Univ. of Michigan, where he wrote a Neural Network Simulator in PDP-8 assembly language. He later joined the university's Brain Research Laboratory where he designed and built equipment which recorded and reinforced single neurons' activity in freely moving laboratory animals. At Hewlett-Packard, he managed the HP2100 Computer Project. As a consultant, he designed the Intel Multibus and the Osborne Vixen. He also taught at The Univ. of Michigan and UCSC. He is now retired and pursuing his lifelong quest to figure out "How the Brain Works." Fred Coury is Guest Gavelmeister for this year's RATS, returning to this prized position after having "accidentally" creating this part of the program at AMW #1 in 1975. He is one of 5 founders of AMW.

Gianluca Iaccarino is the Director of the Institute for Computational Mathematical Engineering and Professor in the Mechanical Engineering Department at Stanford University. He received his PhD in Italy and has worked for several years at the Center for Turbulence Research (NASA Ames & Stanford) before joining the faculty at Stanford in 2007. Since 2014, he is the Director of the PSAAP Center at Stanford, funded by the US Department of Energy focused on multiphysics simulations, uncertainty quantification and exascale computing. In 2010, he received the Presidential Early Career Award for Scientists and Engineers (PECASE) award, and in 2019 was elected Fellow of the American Physical Society "for seminal contributions to turbulence modeling, developments in advanced numerical methods for complex flows, and pioneering research in uncertainty quantification for turbulent flow simulations."

Henrique Kawakami has been deeply involved in the design of cryptographic hardware for over 15 years. From conceptualizing architectural and microarchitectural designs to hands-on tasks like firmware writing, PCB layout, and prototype soldering, he's honed his expertise across every facet of hardware development. Transitioning from hardware design, Henrique redirected his focus to scrutinizing and researching security issues within hardware devices and CPUs. Currently, he leads the STORM team at Intel, which drives forward innovation and excellence in the field of platform security, not only fixing many of the speculative execution class of vulnerabilities, but conceptually rethinking how processors are made.

Isaac Wonder is the former director of the Free Network Foundation, and remains interested in the liberation of all beings. He lives in Berlin, Germany, where you can find him at https://offline.place

Jaden Cohen is a High School Junior. His interests lie in the realms of math and science. He is particularly fascinated by the fields of ML and AI, especially in the context of human-computer interaction. Beyond these technical interests, he also has a passion for reading and writing.

James S. Toreson is a consultant with Toreson Industries. He made leading-edge technical contributions in the fields of integrated circuits, computer design, POS laser scanners. and disk drives early in his career. AMW co-founder Fred Coury was his instructor in a computer lab at the Univ. of Michigan, exposing him to PDP-8 digital design of interfaces. Fred was later his boss at HP while working on the HP 21MX minicomputer. While at HP, he took several post-grad courses taught by AMW co-founder Dr. Fred Clegg at the Univ. of Santa Clara in microprogramming, crypto, ECC, and fault tolerant logic design.

Jennifer Jacobs is an assistant professor at UC Santa Barbara. She heads the Expressive Computation lab, delving into computational art, design, and human-computer interaction. Her research amalgamates emerging computational creation with traditional methodologies, empowering artisans and designers. With a PhD from MIT, Jacobs' work, showcased globally, advances interdisciplinary methodologies. See https://ecl.mat.ucsb.edu/

Joël Franušić is an artist and programmer from Alameda, California. His art and work focus on his mission to make all software, from all time, instantly available for use by any programmer.

John Baldwin is a systems software developer. He has directly committed changes to the FreeBSD operating system for over 20 years across various parts of the kernel (including x86 platform support, SMP, various device drivers, and the virtual memory subsystem) and user space programs. In addition to writing code, John has served on the FreeBSD core and release engineering teams. John has also contributed to the GDB debugger where he was recently appointed as a global maintainer.

Kathleen Tuite has a PhD from University of Washington where she connected citizen science and 3D computer vision via the games Foldit and PhotoCity. She now works for GetODK, architecting the open source mobile offline data collection platform ODK, which is used for humanitarian purposes around the globe. Kathleen inherited the RAT timekeeper position from Mary Eisenhart in 2018. She kindly surrenders her RAT session gavel to Fred Coury this year, but she will assist in scheduling speakers for their 10 minutes of fame. She is a member of the AMW Program Committee.

Ken Shoemaker spent nearly 40 years at Intel where he had the privilege of developing the microarchitectures of some of Intel's famous microprocessors (e.g., the Pentium) and some infamous ones (e.g., the Itanium). He had the honor of being recruited into Intel by AMW's long time chairman, John Wharton, who then invited Ken to attend his first AMW in 1985 where he presented the architecture and microarchitecture of the (then new) i80386. Since retiring in the midst of the Covid pandemic at the end of 2020, his brain has turned to mush but he still relishes every opportunity to mingle with folks in the real world doing cool stuff. He is a member of the AMW Program Committee.

Len Shustek aspired to be a physicist but only got a Masters before deciding that computers were more fun. After his Stanford PhD in Computer Science, he taught at CMU, co-founded two networking companies, and then taught at Stanford. The lack of history in their curriculum inspired him to start the Computer History Museum, whose Board he chaired for 25 years.

Leon Poutievski is a Director / Principal Engineer at Google. He leads a team developing core datacenter technologies, including network topology, routing systems, control plane networks, and scaling. Leon has led projects that introduced innovative data center networking solutions. Some of this work was published at SIGCOMM '22 (Jupiter Evolving), and has been recognized by the ACM SIGCOMM Networking Systems Award and the ACM SIGOPS Hall of Fame Award.

Mark Cummings, PhD, inventor of SDR (Software Defined Radio), has been a Silicon Valley innovator and systems architect since the early days of the microprocessors and microcomputers. He is currently working on a cybersecurity orchestration start-up called S2-D2. Amongst other publications, he reviews the impact of technology in the Fair Observer. He is a member of the AMW Program Committee.See https://www.linkedin.com/in/mark-cummings-ph-d-34017b3

Mary Eisenhart was recruited to AMW by Jim Warren in 1989. She served as General Chair from 2002-2005, and Timekeeper for the RAT session from 1992-2018. As editor of MicroTimes during the '80s and '90s, she interviewed a lot of interesting people, including John Walker in 1992. Currently she performs assorted tasks involving online community and content for Dead.net, Hardly Strictly Bluegrass, the Rex Foundation, and others. She is a member of the AMW Program Committee.

Mary Lou Jepsen was, among others, CTO of One Laptop per Child, founder of Pixel Qi, a fabless LCD company, and leader of projects at Google X and Oculus VR. She now works on commoditizing diagnostic imaging as CEO of OpenWater. See https://www.maryloujepsen.com/

Michael Shebanow is currently CTO at Sapeon, a startup developing AI inference accelerators for the cloud. Previous work has included out-of-order superscalar CPUs for Motorola, HaL, Cyrix, and AMD; NVIDIA GPUs; Samsung;s first mobile GPU; and VP Of Engineering of Cadence's Tensilica group. Michael is an IEEE Fellow "for contributions to superscalar out-of-order processors."

Nan Borreson is the widow of Fred Terman, one of the founders of AMW.

Nancy Blachman founded the Julia Robinson Mathematics Festival in 2007 to inspire joy in math. Shortly thereafter, she started supporting documentary films, and is now producing short documentaries which she hopes will change viewers' attitudes and behavior. She explores things that intrigue her such as what she is about to share with you today.

Onur Mutlu is a Prof. of Computer Science at ETH Zurich, and is also a Visiting Prof. at Stanford Univ. and an Adjunct Prof. at Carnegie Mellon Univ. where he previously held the Strecker Early Career Professorship. He has held industry positions at Microsoft Research, Intel, AMD, VMware, and Google. His current broader research interests are in computer architecture, systems, hardware security, and bioinformatics.

Paula Te is Principal Designer at Chibitronics, and specializes in interface design and research, focusing on crafting, learning, and culture intersections. She explores interactive artifacts bridging digital and physical realms, fostering diverse community co-creation. Previously at Dynamicland and Xerox PARC, her work has been featured in various venues like Ars Electronica and SIGCHI.

Tamara Munzner is a Professor at the University of British Columbia Department of Computer Science, and an IEEE Fellow "for contributions to principles, processes, and design for visualization." She has been active in visualization research since 1991 and holds a 2000 PhD from Stanford. Her book *Visualization Analysis and Design* is widely used to teach visualization world-wide. See https://www.cs.ubc.ca/~tmm/

Tejas Chopra is an Senior Software Engineer and Engineering Leader at Netflix where he works on architecting Netflix Studio in the Cloud. The National Diversity Council recognized Tejas as one of the 2022 40 Under 40 in Tech, and he is also a TedXspeaker where he has spoken on Web3, Cloud, DevOps, and Culture.

Thaís "barbie" Moreira Hamasaki is a former ballerina, physics researcher, and reverse engineer (maybe this one still applies) who shifted to offensive security research at Intel in order to conquer the world (of CPUs). Nowadays, she spends an unusual amount of time (speculatively) looking at HAS, MAS, microcode, and RTL. She has spoken at all the conferences and seen all the things, and right now where she is, she can be considered one of the happiest hackers out there. She is a member of the AMW Program Committee.

Thomas Dullien started his career doing copy protection reverse engineering, then went on to study mathematics and start a company focused on reverse engineering tools and malware/code similarity. This company was acquired by Google, and he spent a few years integrating the technology, followed by a stint in Google Project Zero. During this time, he contributed to the first Rowhammer exploit (authored by Mark Seaborn). After his time at Google, he started a company focused on fleet-wide always-on profiling, which was quickly acquired by Elastic. He enjoys everything adjacent to security, unconventional computational models, computational efficiency, low-level spelunking, and both applied pure mathematics and applied applied mathematics.

Tim Požar works on building infrastructure that enables democratic discourse. He works on SF's Community Broadband Network that provides Internet to low-income folks. Recent works include the design and deployment of High Availability networks at Burning Man for the BLM, Native American tribal lands, etc. He is a member of the AMW Program Committee.

Wei-Ti Liu co-Founded PLX Technology where he was GM and VP of Engineering, oversaw operations, and managed the engineering group and its foundry. He was also President/CEO of NetChip Technology (now part of Broadcom), and a design engineer at IBM, AMD, and Intel. Wei-Ti has extensive experience in ASIC VLSI chip design, and currently works for Quantum Technology, LLC.

Wen-mei Hwu is Prof. Emeritus of the Univ. of theIllinois, and currently a Sr. Dir. of Research at NVIDIA. His 1987 PhD is from UC Berkeley, and he has been working on tolerating latency and maximizing throughput for multiple generations and scales of computing devices and systems.

Yale Patt is a teacher and the Ernest Cockrell, Jr. Centennial Chair in Engineering at The University of Texas at Austin. He earned obligatory degrees from reputable universities and has received more than enough awards for his research and teaching.

Zoya Slavina is an interdisciplinary researcher with an interest in the regulation, security, and ethics of AI systems and associated technologies at the University of Białystok. Her background is in philosophy, ethics, and crossmedia. Zoya expertly examines the interaction between technology and society, and she is interested in development of robust, human-centric regulations for AI development and deployment.