Advance Program

The 11th Annual Microprogramming Workshop
November 19-22, 1978
Asilomar Conference Ground, Pacific Grove, California

Advance Registration Form
MICRO-11

Name

Title

Address

Affiliation

Tel:

Registration fees enclosed totalling
$________________ for items checked below.

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☐ I want to share a room with:

☐ I will definitely attend, but will register later.

☐ I may attend; please keep me on the final mailing list.

☐ Please send ___ copies of registration material.

☐ I will make my own arrangements for lodging.

Conference Steering Committee

Chairman:
Dr. Stephen D. Crocker, USC/Information Sciences Institute

Vice-Chairman:
Prof. Gearold Johnson, Colorado State University

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Conference Overview

The Eleventh Annual Workshop on Microprogramming and Tutorial will be held this year in one of the most scenic locations in North America. In addition to a very promising technical schedule and informal presentations by equipment manufacturers, there are exciting opportunities to tour, to shop and to relax. The theme of this year’s conference is “Very Large Scale Microprograms and VLSI.” This workshop includes participants from the leading universities, research institutes, and industry.

The workshop site is located at the ocean’s edge on the beautiful Monterey Peninsula. This year’s workshop includes food and lodging as a single package. Double occupancy rooms and all meals from Sunday night’s dinner through Wednesday’s breakfast are provided for $135. Four airlines serve Monterey: United, PSA, Hughes Airwest, and Air California. There are direct flights from San Francisco, Los Angeles, Oakland, San Jose, and Orange County.

Tutorial, Sunday 1-6 p.m.

“INTRODUCTION TO MICROPROGRAMMING AND RECENT RESEARCH RESULTS”

The tutorial will be presented Sunday, 1-6 p.m., by P. Adams, D. Gaubatz (DEC), and T. Rauscher (GTE Labs). Attendees should have a basic understanding of computer architecture including assembly language. Each attendee will receive a copy of Foundations of Microprogramming and a set of notes covering recent material not in the book. The tutorial will include a demonstration of the DEC LSI-11 with writable control store.

Prepayment is recommended to guarantee a required minimum number of registrants. In case of cancellation due to insufficient registration, tutorial fees will be refunded.
**SUNDAY, NOVEMBER 19**

**Tutorial:** "INTRODUCTION TO MICROPROGRAMMING AND RECENT RESEARCH RESULTS"

**Supper**

Welcoming remarks
Steve Crocker, General Chairman
Alice Parker, Program Chairman

**Keynote Address**
Wayne Wilner, Xerox PARC, "MICROPROGRAMMING IN SILICON"
Architectural expeditions are now learning to explore the VLSI frontier, and anyone who forgets ENIAC and learns to spell MOSFET can go along.

**Cocktail party**

**MONDAY, NOVEMBER 20**

**Session I: THE IMPACT OF VLSI ON MICROPROGRAMMING**
Chairman: Dave Johansen, California Institute of Technology

"OUR MACHINE, A MICROCODED LSI PROCESSOR."
Dave Johansen, California Institute of Technology

"MICROPROGRAMMED IMPLEMENTATION OF A SINGLE CHIP MICROPROCESSOR,"
Skip Stritter and Nick Tredennick, Motorola

"IMPROVING THE PERFORMANCE OF INTERPRETATIVE HIERARCHIES BY THE INTRODUCTION OF LOCAL HARDWARE," Mike Manthey, Aarhus University

"ARCHITECTURE AND INSTRUCTION SET EXTENSIBILITY OF THE LSI-11 MICROPROGRAMMABLE MICROCOMPUTER," Don Gauthatz, DEC

**Session II: EMULATION**
Chairman: Dennis Allison, Stanford University

"EMMY/360: AN EMULATION OF SYSTEM/360 FOR THE STANFORD EMMY," Walter Wallach, Stanford University

"THE LASS HARDWARE PROCESSOR," Paul Kunz, Stanford Linear Accelerator Center

"MICROPROGRAMMING IN THE TWO PI/V32 COMPUTER," Jimmy Braun, Two Pi

**Session III: MICROPROGRAMMING SYSTEM FUNCTIONS**

"THE VAX-11/780 MICROCODE," Chuck Mathis, DEC

"IMPLEMENTATION AND PERFORMANCE COMPARISON FOR A MICROPROGRAMMED HIERARCHICAL OPERATING SYSTEM NUCLEUS," Helmut Maier and Walter Burkhart, The Universität Stuttgart

"IMPLEMENTATION OF HIGH SPEED DATA SETS WITH MICROPROGRAMMABLE PROCESSORS," Glenn Caplin and Anne Clayton, Georgia Institute of Technology, and Richard Stuart, RXON, Inc.

**Session IV: OPTIMAL GENERATION OF MICROCODE**

"PROPOSAL ON EFFICIENT ADDRESS ALGORITHM FOR HORIZONTAL MICROPROGRAMS,"
T. Tanaka, T. Kawada, and T. Emori, Musashino Electrical Communications Laboratory


"THE COMPLEXITY OF MICROPROGRAM OPTIMIZATION,"
David Dewitt, University of Wisconsin, Madison

"A COMPARISON OF THE CODE SPACE AND EXECUTION TIME REQUIRED FOR FORTRAN ASSIGNMENT STATEMENTS ON SIX COMPUTER ARCHITECTURES,"
Victor B. Schneider, The Aerospace Corporation, and Richard Belgard, Data General Corporation

**Session V: DESIGNER'S NOTEBOOK OF MICROPROGRAMMING AND MICROPROGRAMMABLE SYSTEMS**
Chairman: Bruce Shriver, University of Southwestern Louisiana
(Panels Session)
Nick Tredennick, Motorola; Bill Strecker, DEC; Andy Hell, IBM, Santa Teresa; Gideon Frieder, SUNY Buffalo

Banquet followed by banquet address

"VARIOUS AND SUNDAY TOPICS ON MICROPROGRAMMING," Dr. Richard Merwin, George Washington University

**TUESDAY, NOVEMBER 21**

**Session VI: HARDWARE FOR EMULATION**

"MULTI-MICROPROCESSOR EMULATION,"
Steve Crocker, USC/Information Sciences Institute

"DESIGN OF AN EMULATOR-ORIENTED MICROPROGRAMMABLE COMPUTER,"
Jin Suh and Ron Marko, Wright State University

"LEVELS OF REPRESENTATION OF PROGRAMS AND THE ARCHITECTURE OF UNIVERSAL HOST MACHINES,"
B.R. Rau, University of Illinois

**Session VII: INTERPRETERS**
Chairman: Richard Belgard, Data General

"EXPERIENCE WITH AN INTERACTIVE BASIC MACHINE IMPLEMENTED USING THE BURROUGHS B1700,"
John Hemphill and Richard Thomas, Bowling Green State University; Mark Overgaard, U.C., San Diego; Tod Snook, ZILOG; Al Hartman, INTEL

**Session VIII: SIGNAL PROCESSING**
Chairman: Earl Swartzlander, TRW

"A METHODOLOGY FOR PROGRAMMING A PIPELINE ARRAY PROCESSOR,"
Danny Cohen, USC/Information Sciences Institute

"MICROPROGRAMMED SPECTRUM ANALYSIS,"
Timothy Mulrooney, Bell Laboratories

"A MICRO SIGNAL PROCESSING MODULE,"
David Bell, Harris Corp., Electronics System Division

"A MICROCODED PROCESSOR FOR REAL-TIME GENERATION OF SPEECH WAVEFORMS," Gary Kopeck and Glen Miranker, Massachusetts Institute of Technology

**Session IX: AUTOMATED GENERATION AND VERIFICATION OF MICROCODE**
Chairman: Tom Rauscher, GTE Labs

"AUTOMATIC DESIGN OF (MICRO) CONTROLLERS,"
Steve Saunders, Carnegie-Mellon University; Don Rudissil, Martin-Marietta; Andrew Nagle, Bell Laboratories

"VERIFICATION OF THE FTSC FIRMWARE,"
Dono Van Mierop, USC/Information Sciences Institute

"FIRMWARE VERSUS SOFTWARE VERIFICATION,"
S. Budkowski, Warsaw Technical University, and P. Dembinski, Polish Academy of Sciences

**Session X: LISP MACHINES**
Chairman: David Patterson, U.C. Berkeley

Peter Deutsch, Xerox PARC
Martin Yonke, Bolt Beranek Newman

"REDUCE/170: A MICROCODED ALGEBRA SYSTEM,"
Martin Griss, University of Utah

**Session XI: MICROLANGUAGES**

"CONSIDERATIONS FOR MICROPROGRAMMABLE BIT SLICE ASSEMBLERS,"
Christopher Hodges, Georgia Institute of Technology

"AN INTRODUCTION TO THE VERIFICATION-ORIENTED MICROPROGRAMMING LANGUAGE "MIDDLE","
P. Dembinski, Polish Academy of Sciences, and S. Budkowski, Warsaw Technical University

"TOWARDS A MICROPROGRAMMING LANGUAGE SCHEMA," Subrata Dasgupta, Simon Fraser University

"DESIGN OBJECTIVES FOR HIGH LEVEL MICROPROGRAMMING LANGUAGES,"
Kamran Malik and Ted Lewis, Oregon State University

**Session XII: THE IMPACT OF VLSI ON MICROPROGRAMMING, PANEL SESSION**
Chairman: Earl Swartzlander, TRW;
Jake Jacobs, Hewlett-Packard;
Carver Mead, California Institute of Technology;
Rudy Langer, National Semiconductor Corp.

**WEDNESDAY MORNING, NOVEMBER 22**

INFORMAL DISCUSSIONS

If you are interested in participating in an informal presentation at the Workshop Sessions, please contact: Dr. Alice Parker, Dept. EE, Carnegie-Mellon University, Pittsburgh, PA 15213