



**INTERNATIONAL  
PERSONAL  
ROBOT  
CONGRESS**

**&**

**EXPOSITION**

**APRIL 13-15, 1984  
Albuquerque, N.M.**

**PROGRAM OF EVENTS**

# WELCOME TO IPRC '84



Dear Congress Attendees:

Welcome! IPRC '84 represents a great deal of work by a great many people. It's hard to believe that this time last year, such a gathering was just the germ of an idea on the part of a few dreamers.

Personal robots have been around for several years, but until recently, only on a very small scale. Enterprising individuals and adventurous inventors built them in their garages and workshops, and entertained their families and friends with the feats of these home-made, mechanical pets.

But late in 1982 and early in 1983, a few companies put personal robots on the map by introducing commercial models to the public.

IPRC '84 represents a melding of these two segments of the personal robot industry: the entrepreneurs who have been creating robots for years and the business people who want to now bring this technology to a greater portion of our society. The prospects represented by this union are exciting indeed.

We hope you enjoy the program we have put together for this year's Congress and we look forward to seeing you again in coming years.

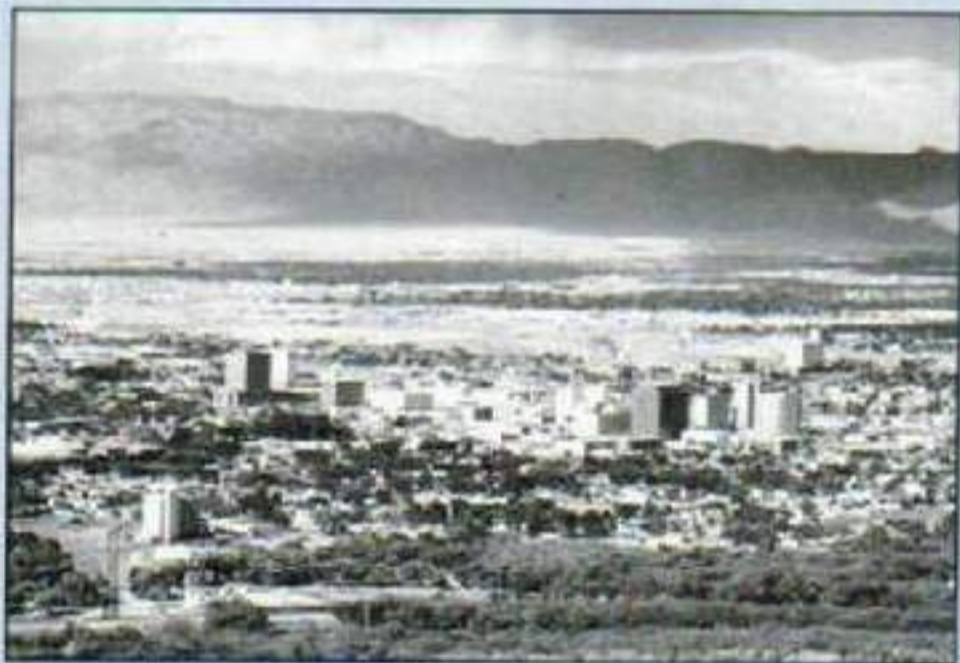
Joseph H. Bosworth  
Steering Committee Chair

## YOU HAVE CHOSEN TO BE A PART OF THE BEGINNING!

## ABOUT ALBUQUERQUE

Albuquerque, New Mexico, is an interesting blend of high technology and ancient cultures. Not only does the city contain a Natural Historic Museum/Indian Cultural Center that brings the prehistoric age to life, but it boasts the world's only atomic museum. Albuquerque is the site each year of the International Balloon Fiesta (the city also has a balloon museum!) and the International Arabian Horse Show. There is an abundance of art galleries and cultural facilities, including the Albuquerque Civic Light Opera Association and the New Mexico Symphony Orchestra.

Albuquerque's Old Town, which traces its origins back to 1706, contains galleries, crafts and jewelry boutiques, museums, restaurants, and specialty shops, in addition to churches dating from the city's beginnings.



### IPRC '84 STEERING COMMITTEE

**Joseph H. Bosworth, Chair**

President, RB Robot Corporation

**Douglas M. Bonham**

Director, Heathkit/Zenith Educational Systems

**Russ Eberhart**

President, Computer Junction, Ltd.

**Skip Steveley**

President, Androbot, Inc.

**Nelson B. Winkless, III**

President, ABQ Communications  
official historian for IPRC '84

### IRPC '84 STAFF

**Sharon D. Smith**

Director

**Carolyn McCants**

Coordinator

**Margaret Cooper**

Art Competition/Display Coordinator

**Roger A. Bollman**

Seminars/PRD Coordinator

## SPECIAL EVENTS

### OPENING CEREMONY

IIRC '84 will open with a robot ribbon cutting; welcoming addresses by Albuquerque Mayor Harry Kinney and U.S. Representative Manuel Lujan; and a keynote address, via satellite from New York, by writer Isaac Asimov.

### SEMINARS

A slate of seven seminar tracts with lectures by 50 of the industry's leading experts will cover everything from robotic sensor systems to product liability, from software standardization to the business of robots.

### COMMERCIAL EXHIBITS

IIRC '84 is a showcase of the first generation of commercial personal robots. In addition, you can see products by suppliers of robot gear—from batteries and motors to wheels and tracks.

### ROBOT SHOPS/PRD DISPLAYS

In addition to commercial exhibits, personal robot developers (PRDs) will display their creations in special booths.

### ART SHOW AND SALE

An art competition for IIRC '84 attracted some 150 entries and resulted in the selection of four prize-winning works. These and 17 other pieces will be on display in the South Exhibit Hall; many of the pieces are for sale.

### COMMEMORATIVE POSTERS AND T-SHIRTS

IIRC '84 offers a commemorative poster, based on the First Prize winning selection from the art competition. In addition, T-shirts with the IIRC '84 logo are for sale.

### ASSOCIATION MEETINGS

Anyone interested in joining either the National or the International Personal Robot Associations is welcome to attend their meetings at IIRC '84.

### AWARDS BREAKFAST

One of the highlights of IIRC '84 will be Sunday's Award Breakfast, where we will honor the PRDs who entered their robots in the competitions and displayed them for Congress attendees.

# SCHEDULE OF EVENTS

DAY/DATE	ACTIVITY	LOCATION
<b>Thursday, April 12</b>		
12:00 noon to 5:00 p.m.	Registration	Ground Level Lobby
6:00 p.m. to 8:00 p.m.	Exhibitor Reception	Lower Level Convention Lounge
<b>Friday, April 13</b>		
7:30 a.m. to 4:00 p.m.	Registration	Ground Level Lobby
8:15 a.m. to 8:30 a.m.	Robot Ribbon Cutting	Main Lobby
8:30 a.m. to 9:15 a.m.	Opening Ceremony Mayor Harry Kinney Congressman Manuel Lujan Keynote Address: Dr. Isaac Asimov	Ballroom A
9:30 a.m. to 12:30 p.m.	Seminars "Hardware Design Considerations" "Business Opportunities" "Human Services" "Legal Aspects"	Lower Level Meeting Rooms
12:00 noon to 6:00 p.m.	Robot Shops/PRD Displays PRD Competitions Commercial Exhibits Art Show	South Exhibit Hall Lower Level Lobby South Exhibit Hall South Exhibit Hall

## Saturday, April 14

8:00 a.m. to 11:30 a.m.	Registration	Ground Level Lobby
8:30 a.m. to 9:15 a.m.	Featured Speakers David L. Heiserman Joseph F. Engleberger Nolan Bushnell	Ballroom A
9:30 a.m. to 12:30 p.m.	Seminars "Software Design Considerations" "Robots in Education" "The Future of Personal Robots"	Lower Level Meeting Rooms
12:00 noon to 6:00 p.m.	Robot Shops/PRD Displays PRD Competitions Commercial Exhibits Art Show	South Exhibit Hall Lower Level Lobby South Exhibit Hall South Exhibit Hall
6:30 p.m. to 8:00 p.m.	National Personal Robot Association Meeting	Apache Room

## Sunday, April 15

8:00 a.m. to 10:00 a.m.	Awards Breakfast and "Golden Droid" presentations	Ballroom A
10:00 a.m. to 4:00 p.m.	Robot Shops/PRD Displays Commercial Exhibits Art Show	South Exhibit Hall South Exhibit Hall South Exhibit Hall

# SESSION LEADERS

## HARDWARE DESIGN CONSIDERATIONS



**Dan Prendergast**, RB Robot Corporation, Golden, Colorado, Vice President, Research and Development at RB Robot and one of the primary designers of the company's RBSX(tm) personal robot.

## LEGAL ISSUES



**Marvin J. Rosenblum**, Marvin J. Rosenblum, Ltd., Chicago, Illinois. Marvin focuses on the business and legal problems facing start-up ventures, especially in the area of high technology.

## THE FUTURE OF PERSONAL ROBOTS



**Nolan Bushnell**, Catalyst Technologies, Sunnyvale, California. The founder of Atari and Chuck E. Cheese's Pizza Time Theatre, Nolan chairs the board of Androbot, Inc.

## SOFTWARE DESIGN CONSIDERATIONS

**William C. Slade, III**, Excalibur Technologies Corporation, Albuquerque, New Mexico. Manager of Operating Systems at Excalibur, Bill was instrumental in the development of Robot Control Language(tm) with Savvy(R), a general-purpose language for the RBSX.

## BUSINESS OPPORTUNITIES



**Sanford J. Garrett**, Paine Webber Mitchell Hutchins, Inc., New York, New York. Sandy is the senior analyst responsible for the office equipment industry at this leading Wall Street research firm.

## ROBOTS IN EDUCATION



**Douglas M. Bonham**, Heath Company, Benton Harbor, Michigan. Doug has written over 100 self-study courses and textbooks, and has taught electronics at Lake Michigan College and for the U.S. Air Force.

## HUMAN SERVICES

**K.G. Engelhardt**, Veterans Administration Medical Center, Palo Alto, California. A Research Health Scientist, K.G. is most interested in the role robotics can play in health care.

**Larry Leifer**, Stanford Rehabilitation Research and Development Center, Palo Alto, California. An Associate Professor of Mechanical Engineering at Stanford University, Larry is concerned with human/computer interaction in robotics and design.

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## SPEAKERS

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### HARDWARE DESIGN CONSIDERATIONS

**Tom Carroll**, Robotics Consultant; Universal Robot Systems; Long Beach, California. Tom built his first robot in 1957 and since that time has built more than 100 robots.

**Brent DeWitt**, Staff Engineer; NBI, Inc.; Boulder, Colorado. Formerly Project Manager at RB Robot, Brent is an accomplished designer of his own robots, including one fashioned after K-9 from the television show "Dr. Who."

**John Gutman**, AT&T, Atlanta, Georgia. John started Atlanta's first robotics club and is co-founder of REAL (Robot Experimenters Amateur League).

**Jack Lewis**, Micromation, Inc.; Columbia, Maryland. Jack is President of this company, which develops peripherals and software for Heath's HERO I personal robot.

**James M. Lytle**, Heath Company, Benton Harbor, Michigan. Project Manager for the HERO I robot development, Jim is now Product Line Manager for Heathkit/Zenith Educational Systems.

**Richard D. Prather**, Universal Robotic Systems, Palo Alto, California. Founder of the Peninsula HomeBrew Robotics Club, Richard has developed several robots both for the disabled and for the movie industry.

**Mark E. Rosheim**, Sperry Corporation, St. Paul, Minnesota. At Sperry, Mark is in the Advanced Manufacturing Techniques Group, which deals with automation in manufacturing. He also designed a wrist actuator for Cincinnati Milacron.

**Patrick H. Stakem**, Interface Technology, Inc.; College Park, Maryland. Pat is President of this company, which developed and marketed add-ons for HERO I and RB5X.

### HUMAN SERVICES

**Roger Awad**, Stanford University, Palo Alto, California. A Ph.D. candidate at Stanford, Roger is doing work in the diffusion of innovations, and has experience in robotic research and training with the Veterans Administration.

**Tim Heritage**, Student, Denver, Colorado. A quadriplegic since a motorcycle accident, Tim provides invaluable insight into training and using robotic aids for the severely disabled.

**William H. T. La**, affiliated with the Veterans Administration, Palo Alto, California. Bill invented and patented an omni-directional mobile base system, and managed the development of the first Topo program at Androbot.

**Woodrow Seamone**, Johns Hopkins University, Laurel, Maryland. A member of the Applied Physics department at Johns Hopkins, Woodrow is involved in the application and clinical evaluation of prosthetics to robotic technology.

**Peg Shaffer**, Paradigm, Inc., Washington, D.C. President of Paradigm, Peg is interested in the human factors to be considered in the implementation of robotic technologies.

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## SPEAKERS

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### ROBOTS IN EDUCATION

**Marilyn Childs**, Mariner High School, Mukilteo School District, Everett, Washington. Marilyn developed the first robotics program, separate from a computer sciences program, for students on the high school level and helped implement it.

**Larry Heath**, School of Technology, Indiana State University; Terre Haute, Indiana. Larry is involved in teaching robotics and sensory applications at the college level.

**Clay G. Johnson**, Vice President for Instruction, Texas State Technical Institute, Waco, Texas. On a government-funded committee to devise robotic curriculum, Dr. Johnson is also on the staff of TSTI, which boasts a showplace robotics lab.

**Cecil R. Lennox**, Albuquerque Technical-Vocational Institute, Albuquerque, New Mexico. Cecil has been an instructor of Electronics Technology for 25 years and is interested in robotics curriculum in technical education.

**Charles McKay**, University of Houston-Clear Lake and Johnson Space Center, Houston, Texas. As head of the High-Technologies Laboratory, Dr. McKay works with the University of Houston, area community colleges, and the Johnson Space Center on research and training in the area of cooperative robotics.

**Paul E. Resta**, National Institute of Education (NIE), Washington, D.C. Currently on leave of absence from the University of New Mexico, Dr. Resta served as Associate Dean for Research in the College of Education and is a professor in the Department of Educational Foundations.

**Pat John Rosato**, Unimation, Inc.; Danbury, Connecticut. With his background in industrial robotics, Pat is interested in what industry needs in the way of basic knowledge and skills, and how educational robots can help provide it.

**Fred Z. Sitkins**, Western Michigan University, Kalamazoo, Michigan. Fred is Associate Professor in WMU's College of Engineering and Applied Sciences, and is concerned with what our secondary schools must offer to encourage and prepare students for advanced technologies.

**Deborah Waldo**, RB Robot Corporation, Golden, Colorado. Deborah serves as RB Robot's Manager of Educational Marketing and is involved in the development of robotic curriculum for K through 12.

### THE FUTURE OF PERSONAL ROBOTS

**Fred D'Ignazio**, Writer/Editor/Consultant, Roanoke, Virginia. Columnist for *Compute!* and *Compute!'s Gazette*, Fred believes that robots will be more than servants—they will be teachers, pets, and companions.

**David L. Heiserman**, Freelance Writer, Columbus, Ohio. The author of 18 books, five of which deal with hobby robotics, David is also an R&D consultant.

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## SPEAKERS

**Carl Helmers**, *Robotics Age Magazine*, Peterborough, New Hampshire. Carl is the Publisher and Editorial Director of *Robotics Age*.

**Nelson B. Winkless, III**, ABQ Communications, Albuquerque, New Mexico. One of the organizers of IPRC '84. Nels is the author of numerous articles and books, including *Robots on Your Doorstep*.

### LEGAL ISSUES

**Dennis D. Meredith**, Moses, Dunn, Beckley, Espinosa & Tuthill; Albuquerque, New Mexico. A certified public accountant. Dennis helps small businesses with important tax considerations.

**Donald P. Smith**, Robert Singer and Associates, Albuquerque, New Mexico. In private law practice, Don specializes in patent law. He is also an engineer.

**Alan C. Torgerson**, Miller, Stratvert, Torgerson & Brandt; Albuquerque, New Mexico. A partner in his own law firm, Alan is concerned with products liability as it relates to personal robots.

### BUSINESS OPPORTUNITIES

**Douglas M. Bonham**, Heath Company, Benton Harbor, Michigan. As Director of Heathkit/Zenith Educational Systems, Doug directs Heath Company's newly emerging personal and educational robotics business.

**Joseph H. Bosworth**, RB Robot Corporation, Golden, Colorado. Founder of RB Robot and chair of the Steering Committee for IPRC '84, Joe was instrumental in organizing the Congress.

**Jean-Michel Gabet**, Cosma International, Redwood City, California. Jean-Michel chairs this multi-national consulting and marketing company specializing in high technology and electronics.

**Peter Matthews**, *Your Robot Magazine*, London, England. Peter is Editor of *Your Robot Magazine*, and a robotic designer and consultant.

**Bruce Sánchez**, New Tech Promotions, Los Angeles, California. President of New Tech Promotions and a personal robot consultant, Bruce also is a retail representative for robot manufacturers.

**Skip Steveley**, Androbot, Inc.; Sunnyvale, California. Skip is President of Androbot, which markets the Topo and the B.O.B. personal robots.

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## SPEAKERS

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### SOFTWARE DESIGN CONSIDERATIONS

**Richard L. Roth**, ROBOWARE, Inc.; Pittsburg, Pennsylvania. As President of ROBOWARE, Richard is involved in the advancement of industry-standard concepts for personal robotics software.

**Robert J. Zigon**, ROBOWARE, Inc.; Pittsburg, Pennsylvania. Robert is concerned with the need for high-level development tools and operating systems in software development for personal robots.

## NOTES

Thank You For Attending IRPC '84

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