# A S E I

*American Society*
*of*
*Engineers from India*

## SIXTH NATIONAL CONVENTION

## 'PATHS TO PROGRESS'

**SATURDAY, SEPTEMBER 16, 1989**
**HYATT REGENCY, DEARBORN, MI**

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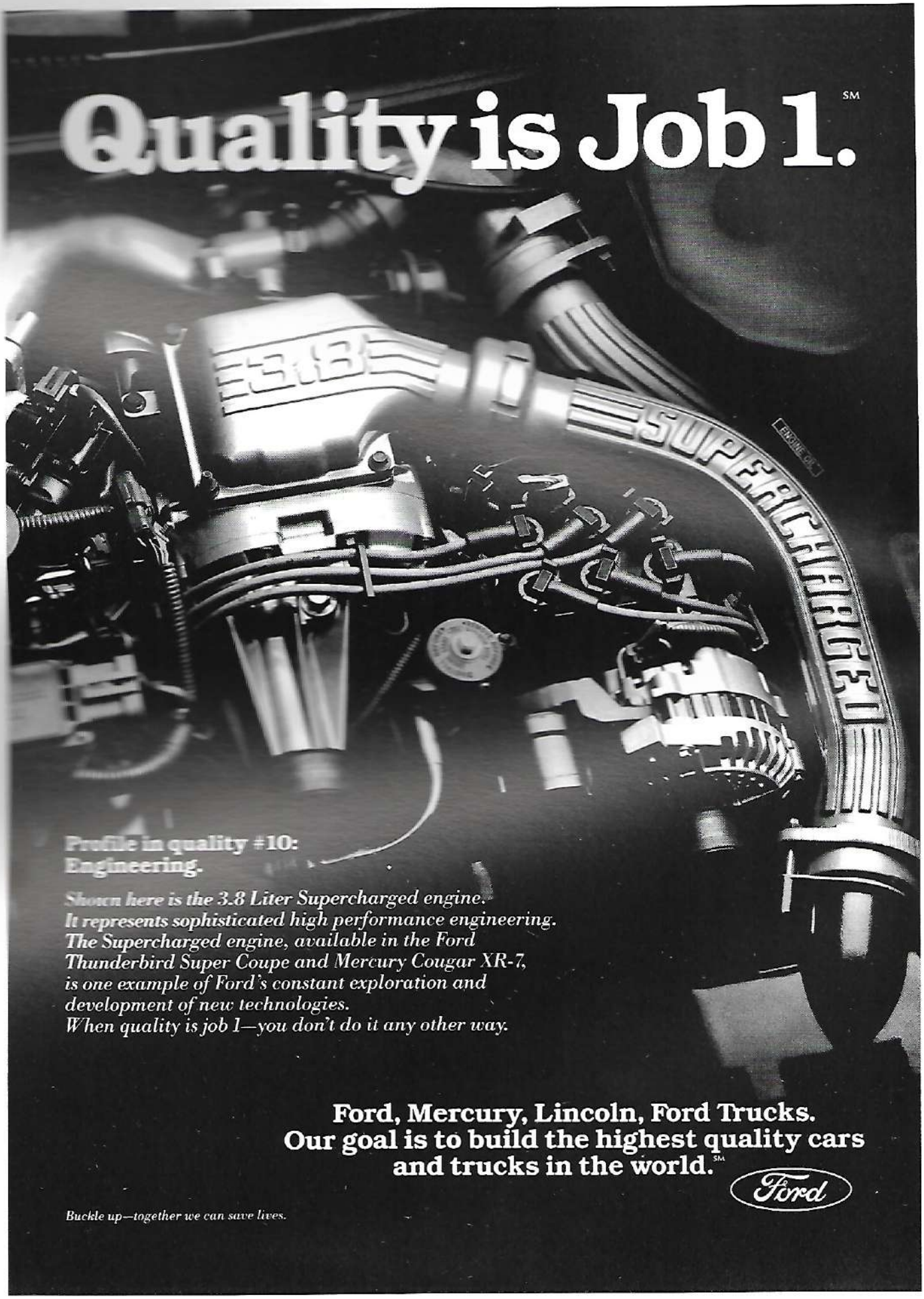
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# *AMERICAN SOCIETY OF ENGINEERS FROM INDIA*

## VISION

ASEI TO BE:

- A nationwide network of engineers of Indian origin
- A forum to assist members in advancing their careers
- A facilitator of Technology Transfer between U.S.A. and India
- A national professional organization with the goal of *"service to its members"*

## ASEI ACTIVITIES

### CAREER ENHANCEMENTS

- Provide Career Guidance and Counseling
- Facilitate Networking
- Assist in Skill Development through Continuing Education Courses and Technical Seminars
- Encourage PE registrations

### TECHNOLOGY TRANSFER

- Conduct Workshops on How To Transfer Technology to India
- Assist in Development of Rural India
- Provide Communication Channels for Retired Engineers
- Disseminate Opportunities in India for NRIs.

### STUDENT AFFAIRS

- Providing guidance to Students
- Establish Merit Scholarships
- Assist in Practical Training and job placement

### LIAISON WITH INDIA

- Establish working relationship with government and private organizations in India

### ORGANIZATIONAL MATTERS

- Establish a National Office
- Establish an Editorial Board and Publish Quality Newsletter
- Increase Membership
- Publish Directory of Members
- Increase awarness of ASEI
- Facilitate local chapter meetings

### CONVENTIONS & AFFILIATIONS

- Conduct Conventions throughout U.S.A.
- Cooperate with Other Professional Societies with Similar Goals.

## LOCAL CHAPTER ACTIVITIES

- Conduct bimonthly meetings to promote discussion/participation on current events
- Communicate with ASEI National Office and other Local Chapters

# AMERICAN SOCIETY OF ENGINEERS FROM INDIA
# 1988-89 ORGANIZATION

## BOARD OF DIRECTORS

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SECRETARY:
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Patel, Ramesh . . . . . (313) 559-0443
Raja, Raj . . . . . (313) 451-0538
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Sabnis, Gajanan . . . . . (301) 460-4447
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COMMITTEE CO-ORDINATOR:
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LIAISON:
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NATIONAL CONVENTION:
Vora, Shailesh . . . . . (313) 964-3000

PUBLIC RELATIONS:
Raja, Raj . . . . . (313) 337-5367

STUDENT'S AFFAIRS:
Khasnabis, Snehamay . . . (313) 689-3542

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AUDIT:
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LONG RANGE PLANNING:
Rao, Veni . . . . . (313) 845-3987

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

JAMES J. BLANCHARD
GOVERNOR

August 31, 1989

Greetings:

As Governor of the State of Michigan, it is a pleasure to extend official welcome to the members of the American Society of Engineers from India as the group brings its membership to Michigan for the Sixth National Convention on September 16, 1989. I would like to take this opportunity to invite all in attendance to enjoy the special beauty and bounty of our state while renewing old friendships and completing convention business.

Our nation is a melting pot of cultures and distinct ethnic diversities. While such differences enhance our lives, it is not always an easy task for citizens of various origins to comprehend the intricacies of American society. The American Society of Engineers from India, one of the largest nonprofit Indian American national organizations, is to be commended for its role in helping Indian Americans assimilate into mainstream America.

I am confident that you will achieve success in reaching your goals. Please accept my sincerest best wishes for an enjoyable time in the Great Lake State.

Sincerely,

Jim Blanchard

James J. Blanchard
Governor

# *MESSAGE FROM . . .*

**S. M. Shahed**
President

**J. Nirdosh Reddy**
Chairman of the Board

We believe that ASEI has acquired a lot of momentum and the processes established in earlier years have been strengthened. Our efforts in 1988-89 have been focused on implementing long term plans. This year's accomplishments are a small beginning compared to what we can be. ASEI's **VISION** remains as clear as before and we continue to work towards it.

The highlights of our activities are listed on the facing page.

We are proud to be a part of an accomplished group of technical people in this country. The accomplishments of the coming generation promises to surpass ours. It is important for us to try to keep this organization alive and bring the younger generation into it to recognize that there is something they have in common that continues to bind them together. This cannot be accomplished by a regional organization, by one generation alone, and certainly not by a handful of people however dedicated they may be. It can only be done by bringing new people into the organization, helping the coming generation get started on its career path, and establishing long term links for them with the country of origin. We need your help in doing this. More specifically, we need your help in:

Establishing local chapters in order to increase the geographic impact of ASEI.

Making national committees effective in order to impact our stature as a professional national group, impact technology exchange with our home country, and pave the way for the coming generation of Indian American engineers

Our sincere thanks to the many office holders and many other volunteers who have generously given their time in executing the work of ASEI. Without their commitment we would not be able to make the progress we have been making. We hope that you will also decide to get involved.

# ASEI HIGHLIGHTS OF 1988-89

## MEMBERSHIP

- Started successful membership drives in several cities outside Detroit.
- Started Corporate Membership category and are beginning to gain Corporate Members.

## MENTORING

- Started a pool of senior members who have volunteered to serve as mentors.
- Created a mechanism where those needing advise and career counseling can access these mentors through ASEI.

## NETWORKING

- Increasing the information in membership data base and are working out the mechanism by which such information will allow us effective networking.

## CAREER ENHANCEMENT

- Conducted a poll of members to define the services that would be most helpful to them and draw up a plan to put such services in place.
- Set up a pool of mentors as a result of this poll.
- Will offer training sessions on social interaction, corporate culture and communication.

## STUDENT AFFAIRS

- Implemented student scholarship award of $1,000. We recognize students as a key membership group to carry ASEI traditions into the future.

## TECHNOLOGY EXCHANGE

- Established a task force to define our role. Much needs to be done in this area.

## COMMUNICATION AND PUBLIC RELATIONS

- Established formal contact with similar organization in California - Silicon Valley Indian Professionals Association.
- Our newsletter has grown into a regular channel of communications with our members and other similar organizations. It has improved in quality of publication and content.


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Treasurer

Ramesh Patel
Committee Coordinator

Manu Vedapudi
Secretary

Jagdish Agrawal
Awards

Jehangir Mistry
Editorial

Asha Reddy
Membership

Noor Kapadia
Constitution

Raj Raja
Public Relations

Snehamay Khasnabis
Student Affairs

Veni Rao
Long Range Planning

# National Convention Committee - 1989

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Chairman

Arun Bhavsar

Susan Dalley

Lakshmi Vora

Shafi Lokhandwala

Ramesh Patel

Usha Raja

Prakash Shrivastava

Manu Vedapudi

Arun Vijan

# TOTAL QUALITY MANAGEMENT

## Developed by the American Supplier Institute, Inc. as an implementation guideline for Continous Improvement

### DEFINITION

Total Quality Management (TQM) is an operational framework for more specific programs such as the Baldrige Award, CWQC, TQC, TQE, TQI, etc. The broad application of TQM facilitates individual programs through Company Policy and the Business Plan.

Total Quality Management is a proactive form of management based on the philosophy that continuous improvement is essential to long range success.

Recognizing the value of human contributions, TQM seeks to improve the capability of the individuals. Everyone in the organization, beginning with top management, must understand and practice quantitative methods for the achievement of common goals.

Through implementing TQM, an organization can continuously improve its processes and procedures, product or service quality, costs and delivery times, and most importantly, the happiness of employees, customers, and suppliers.

### MANAGEMENT OVERVIEW

To schedule an Internal Management Overview on TQM, contact Peggy Jennings at the American Supplier Institute, Inc.

# PLENARY SESSION

## PATHS TO PROGRESS

**Jim Padilla**

Mr. Jim Padilla has spent over twenty years at Ford Motor Company with assignments in a broad range of areas, including Engineering, Manufacturing, Planning and Regulatory Compliance. As Body & Assembly Program Operations Manager, he is responsible for Escort and Tracer production and quality from Wayne and Hermosillo Assembly Plants, as well as introduction of the all new CT20 Escort/Tracer for 1990. Prior assignments related to: Quality and Process Engineering for Assembly Operations; Design of Automotive Electronics, Engines and Components; Technical and Product Planning; and Regulatory Compliance Technical Liaison on Exhaust Emissions and Fuel Economy with U.S. EPA and NHTSA.

In 1978, Mr. Padilla was the first auto industry representative chosen for the White House Fellow program. During his year in Washington, he served as a special assistant to the Secretary of Commerce, working on international trade, regulatory policy, and government-industry issues.

Mr. Padilla earned a BS in Chemical Engineering, Magna Cum Laude, and a MS in Engineering in 1969 from the University of Detroit. The next year, he earned a MA in economics.

Mr. Padilla, his wife, and three children reside in Plymouth, where he is active in church and civic activities.


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# SESSION A

# TECHNOLOGY TRENDS

**Chairperson:**

Meera Vijan

India has significant awareness and interest in all current cutting edge technologies in United States. Technology alone without the total environment around it has very limited use. Any technology seriously worth transferring will need a commercial base for success. In this session, the emerging technologies that have such potential, along with ideas on how to transfer such technologies from R&D to production and some case study of successful technology transfers, will be discussed.

**Ms. Meera Vijan** received a Bachelor of Science degree in Physics from Madras University, India and a Master of Science degree in Chemical Engineering from the University of Detroit.

She is presently Director of Microelectronics Processing at Ovonic Imaging Systems responsible for the fabrication of large area active matrix displays. Before joining OIS, she worked at Energy Conversion Devices where she directed the processing and testing of a dry process, non-silver imaging film for microfiche applications.

# A-1: TECHNOLOGY TRENDS

## INCREASING R&D EFFECTIVENESS

**Stephen M. Bakonyi**

Many technology development organizations face a conflict between short and long term objectives. Short term objectives support the organization's bottom line by providing product development and process improvement. Long term objectives, on the other hand, support long term survival by research, technology development and building staff competence. Management's challenge is to achieve the proper balance between the two.

In many organizations, long and short term work are separated by a combination of organizational boundaries, independent funding, or physical distance. Unfortunately, these barriers may result in too little communication, leading to poorly directed long term programs and poor technology transfer.

To improve the effectiveness of a R&D organization, it is necessary to increase the number of technologies which are successfully implemented by the operating organizations. Unfortunately, there are many barriers to this successful transfer of technology. For this reason, management must take a pro-active role to stimulate the flow of technology from R&D:

- Examine and understand the resistances at the critical transfer points.
- Institute an effective technology planning activity to target R&D toward company goals.
- Implement an appropriate reward system to foster a positive motivational environment.
- Plan and manage the implementation of R&D results.

Some of the resistances to technology transfer are caused by the lack of information about the technology. This may be due to the isolation of the R&D organization from the operating groups, the lack of market knowledge by R&D personnel, the physical decentralization of the company, and the lack of special skills and knowledge in the operating organizations to cope with the new technologies. Additional serious restraints to technology transfer are short term management incentives, lack of urgency in R&D, and fear of risk taking in the organization.

Long range technology planning contributes to R&D effectiveness by determining the particular technical strategies the company will use to achieve its business objectives. Planning also defines the specific mission of each major R&D and operating group, and finally ranks and balances R&D projects to best meet the company's competitive threats and opportunities.

Technological progress is encouraged through positive management and policies, such as the interest and involvement of management in technical programs, personnel interchange among technical and operating units, establishment of a reward system for change, and definition of long term organizational goals.

To successfully implement technology, the importance of the technology transfer process has to be emphasized, and the barriers to technology transfer have to be identified and overcome. Specific bridging mechanisms have to be established, falling into human, procedural, organizational, physical and financial categories.

**Mr. Stephen M. Bakonyi's** current position is Manager of Technology Programs, Advanced Product Engineering, GM Advanced Engineering Staff. In this position, he is responsible for technology planning, technology assessment, technology information and the GM New Devices Section which handles all outside submissions to General Motors.

Mr. Bakonyi started his career at GM Engineering Staff in 1958, with assignments primarily in the structural and vibrational analysis of engines and engine components. From 1972 to 1974, he transferred to Chevrolet Motor Division as one of the release-responsible engineers on GM's rotary engine project. Returning to the Engineering Staff, Mr. Bakonyi conducted combustion and friction studies to improve spark ignition engine efficiency, and was appointed project manager of this activity four years ago. In 1986 he was made responsible for the technology assessment project, and was promoted to his current position in 1987.

Mr. Bakonyi has been active in SAE for a number of years, serving on both the Engine Committee of the Passenger Car Activity and more recently, the Powerplant Activity. He is a former chairman of the Advanced Powerplant Committee, the Powerplant Activity, and the Engineering Activity Board. He is currently serving a three-year term on SAE's Board of Directors.

Mr. Bakonyi obtained his Bachelor of Science degree in Mechanical Engineering from Lehigh University in 1958 and his Master of Science degree in Mechanical Engineering from Wayne State University in 1963. He is a member of Phi Beta Kappa, Tau Beta Pi and Pi Tau Sigma. Mr. Bakonyi also has membership in the Engineering Society of Detroit.

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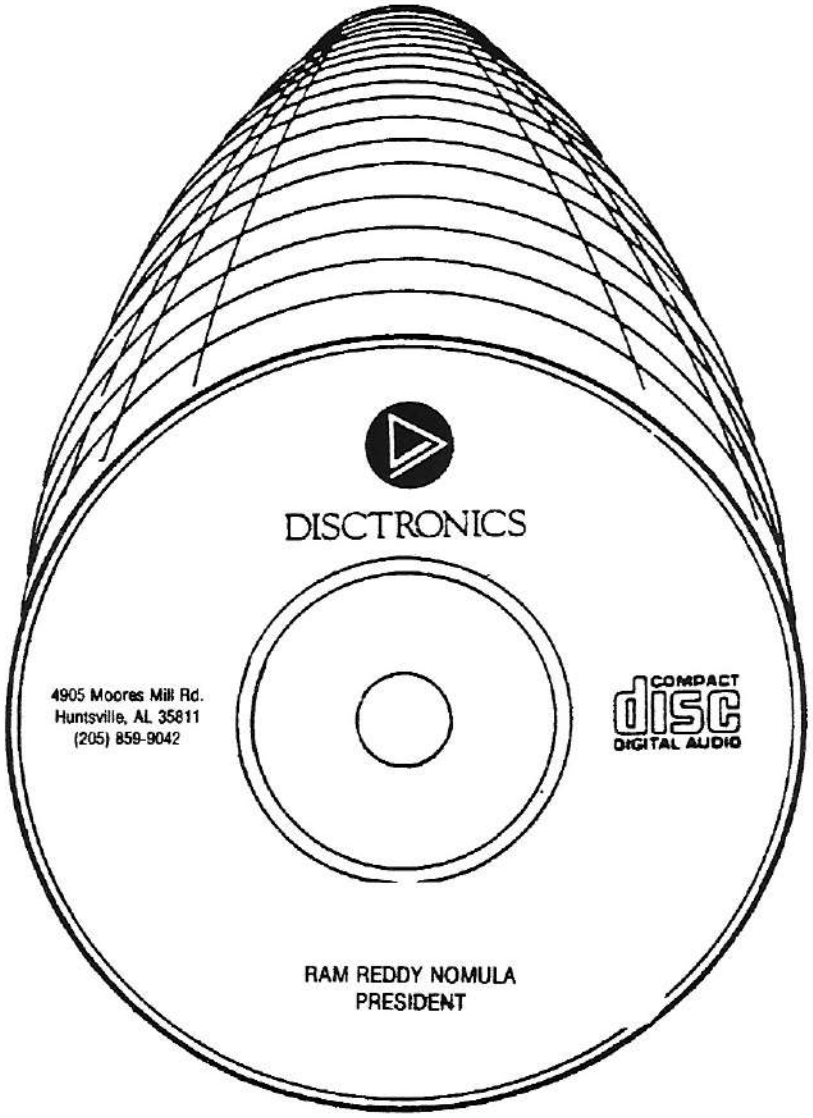


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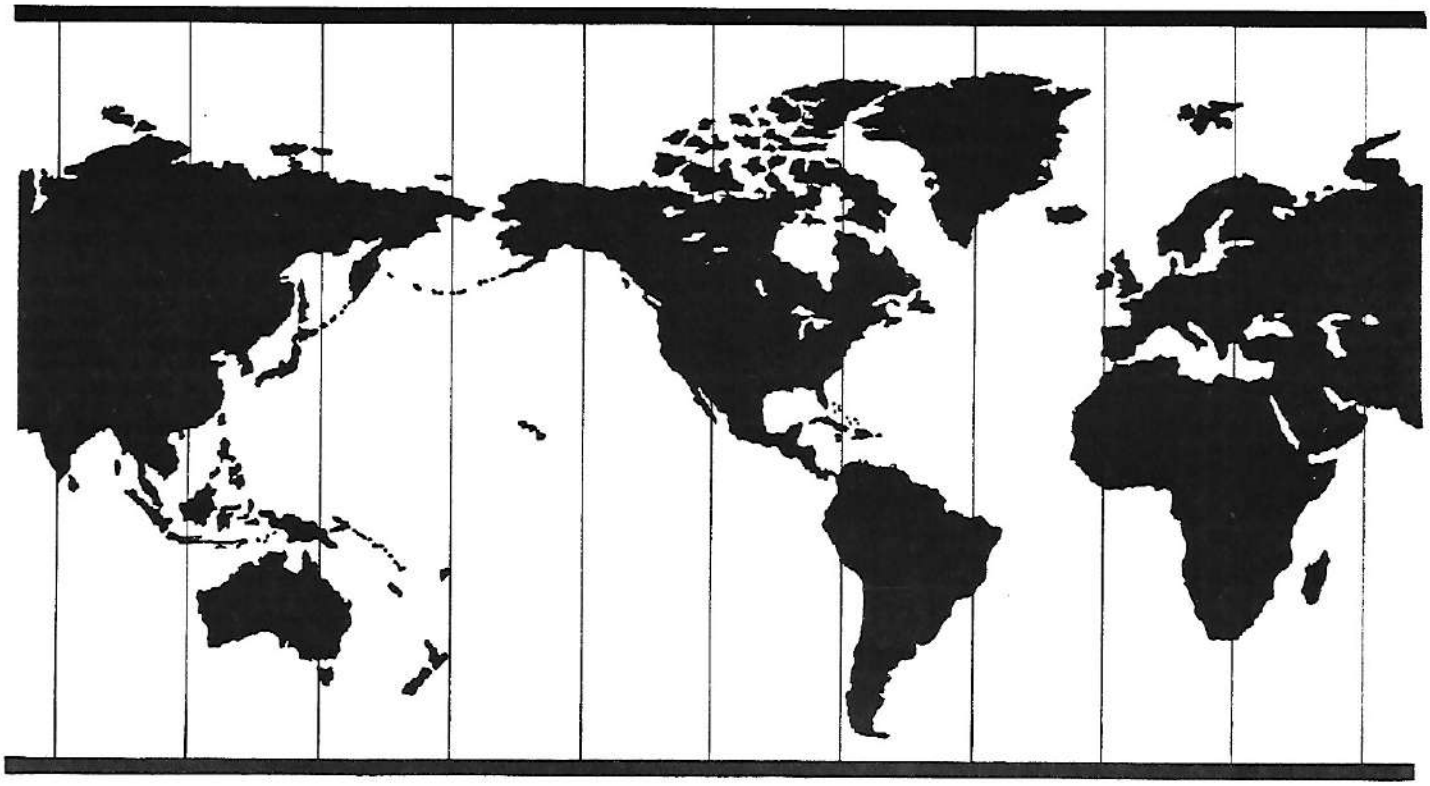

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# A-2: TECHNOLOGY TRENDS

## BIOTECHNOLOGY - A TECHNOLOGY FOR FUTURE

**Nalini Motwani, Ph.D.**

Biotechnology, which involves gene cloning, monoclonal antibody technology and transgenic animals, will have the same impact on our lives in the nineties as the computers did in the seventies. Biotechnology has already made a great impact on medicine, therapeutics, agriculture and chemistry. The talk will focus on the applications of biotechnology in industry and how it would affect our day-to-day life in the future.

Dr. Motwani will discuss the trends and opportunities that exist in the field, and discuss how to take advantage of these opportunities in the coming decade.

Dr. Nalini Motwani received her Ph.D. from Wayne State University. Her post-doctoral research was supported by NIH and later she was appointed as an assistant professor at Oakland University. Dr. Motwani has published several scientific articles in leading journals. She was invited to the Karolinska Institute (Karolinska is famous for awarding Nobel prizes) to carry out collaborative research.

She joined her current position in 1983 and has been involved with the start-up of Strohtech, which is a biotechnology subsidiary of the Stroh Brewery Company. Her present research involves working on recombinant blood.

Dr. Motwani is a member of the Industrial Advisory Board for the State sponsored Biotechnology Centers at Wayne State University Medical School and at Oakland University.

# A-3: TECHNOLOGY TRENDS

## FUTURE DIRECTIONS IN CONTINUOUS SYSTEM SIMULATION

**William O. Grierson**

Continuous system simulation has evolved steadily since its beginning in the early 1950's. We have seen the demise of analog and hybrid technology that dominated the market in the early days. Today, we see simulation being served primarily by multi-processor, all-digital, computing systems. We have also seen significant changes in methods of programming. Analog computers were programmed by the use of patch cords. This and the need for assembly language programming meant that specialist programmers were required to assist the simulation engineer in doing his work. Today, most of the specialists have disappeared. The simulation engineer can communicate directly with their problem using a high level simulation language.

One of the more important driving forces in the development of simulation technology is expanding problem complexity. We have seen problem size expand from a few state variables to models now encompassing several hundred. In addition, we now have problems that include various disciplines. This means that the vendor must supply new algorithms to support signal processing, discrete variable representation, hardware-in-the-loop facilities, etc.

In the future, more and more industries will use simulation to develop more cost effective products. This expansion and the natural desire for those already using simulation to solve larger problems, will place new demands on the vendors supplying simulation products. Applied Dynamics International is working toward these problem solutions. The direction of simulation and the new tools necessary to solve these problems will be presented.

**Mr. William O. Grierson**, received his Bachelor of Science degree in Science (Physics) from the University of Michigan, and his Masters of Business Administration (Operations Research) degree from Wayne State University.

He has worked twenty years in simulation as a research engineer in aerospace and automotive applications. For the last nine years, he has been responsible for the international business of Applied Dynamics International, Ann Arbor, Michigan.

# A-4: TECHNOLOGY TRENDS

## MICROELECTRONICS ON GLASS

**Zvi Yaniv, Ph.D.**

The rapid development of the information revolution and the resulting increases in the amount of information generated has driven the conventional microelectronic technology to increasing degrees of miniaturization and packing densities on the silicon wafers. However, a parallel trend is developing toward "Giant Electronics" which requires the transfer of microelectronic technology from silicon wafers to glass. This new direction in technology requires the development of large area circuit devices.

Amorphous silicon materials provide excellent characteristics for devices which form the basis of large area microelectronics. They are applicable to one and two dimensional optical information processing devices such as high quality flat panel displays and large area image scanners. Displays such as active matrix liquid crystal displays provide thin, full color, television-type screens for instrument readouts, computer monitors, commercial televisions, and ultimately, HDTV. Large area scanners can provide inexpensive and fast input devices for fax, computer scanners, and smart copiers, etc. The use of information transfer electronics is pervading homes and offices, as well as industrial fields, and advances in circuit technology will be essential to the next generation.

**Dr. Zvi Yaniv** received his Master of Science degree in 1972 from the Hebrew University of Jerusalem with distinction, and his Ph.D. in 1982 from Kent State University in Ohio. His research for his Masters degree included electrical and optical effects on thin amorphous chalcogenide films, while his doctoral field of research was N.M.R. and optical studies of liquid crystals.

Dr. Yaniv has an extensive background in the study of Order Parameter Tensor in cholesteric and smectic liquid crystals. He has authored an co-authored over 80 professional articles and has made numerous conference presentations and patent applications.

Dr. Yaniv has held a wide range of academic and management positions in the United States and in Israel. His activities at OIS as President and Chief Operating Officer combines his expertise in the liquid crystal field with his experience in amorphous thin-film semiconductors. Dr. Yaniv's contribution has been essential to the formation and growth of Ovonic Imaging Systems.

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# AMERICAN SOCIETY OF ENGINEERS FROM INDIA

# 1989 NATIONAL CONVENTION

11:30 a.m. ***Registration - Regency Ballroom***

## Afternoon Session

12:30 p.m. ***Plenary Session*** : Paths to Progress - Mr. Jim Padilla
Regency A

1:45 p.m. ***Three Concurrent Sessions*** :

**Session A**
Regency A

***Technology Trends***
Chairperson:
Ms. Meera Vijan

**Increasing R&D Effectiveness**
Mr. Stephen M. Bakonyi

**Biotechnology - A Technology for Future**
Dr. Nalini Motwani

**Future Directions in Continuous System Simulation**
Mr. William O. Grierson

**Microelectronics on Glass**
Dr. Zvi Yaniv

**Session B**
Regency B

***Paths to Progress***
Chairperson:
Mr. Mukul M. Mehta

**Alternative Paths for Engineers**
Mr. Pradeep Mehra

**No Goal Too High**
Mr. Vinod Gupta

**Barriers in the Path to Progress**
Mr. Jag Bushan Kaul

**A Non-Engineer's View**
Mr. Jamil Akhtar

**Session C**
Regency E

***Student Affairs***
Chairperson:
Dr. Snehamay Khasnabis

**Needs of Today's High Tech Industries**
Mr. Larry Berch

**Transition from a Technical Career to a Management Career**
Mr. Vinod K. Sahney

**Immigration Laws**
Ms. Vicky Farah

**Role of Educational Institutions in an Era of Changing Technology**
Dr. William C. Taylor

## Evening Banquet

5:30 p.m. ***Social Hour***

6:45 p.m. ***Dinner***

| | | |
|---|---|---|
| Master of Ceremonies | - | Mr. Arun S. Vijan |
| Welcome | - | Mr. Nirdosh Reddy |
| President's Report | - | Dr. S. Shahed |
| Address & Awards | - | Dr. Bishnu Atal |
| Closing Remarks | - | Mr. S. B. Vora |

9:15 p.m. ***Entertainment***

An Evening of Ghazals
by Afzal Subhani and Munni Begum

# AMERICAN SOCIETY OF ENGINEERS FROM INDIA

# 1989 NATIONAL CONVENTION

**Chief Guest**
Dr. Bishnu S. Atal

Dr. Bishnu S. Atal is Head of the Acoustics Research Department at Bell Laboratories in Murray Hill, New Jersey. He has been with Bell Laboratories since 1961 and has over thirty years of experience in research development and consulting.

An internationally known leader in speech coding, Dr. Atal has made a major contribution in the field of speech analysis, synthesis and coding. His work has included a wide range of topics such as computer simulation of sound transmission in rooms, new measurement techniques for concert halls, fading in mobile radio, automatic speaker recognition and speech coding. His research interests have centered on speech communication and new methods for analysis and synthesis of speech signals based on linear prediction. He holds numerous patents in the fields of speech coding, mobile radio communication and stereophonic sound reproduction, and has published over 75 technical papers in the fields of architectural acoustics and speech communication.

Dr. Atal is a Fellow of the Acoustical Society of America and the IEEE, and is a member of the National Academy of Engineering. He received the 1975 IEE Acoustics, Speech, and Signal Processing Society Technical Achievement Award for fundamental contributions to linear predictive coding of speech signals. In 1980 he received, jointly with Mr. R. Schroeder, the IEEE ASSP Senior Award for their paper on predictive coding of speech signals and subjective error criteria. He is the recipient of the IEEE Centennial Medal in 1984, and the IEEE Morris N. Liebman Memorial Field Award in 1986 for his pioneering contributions to linear predictive coding for speech processing.

Dr. Atal received the B.Sc. (Honors) degree in Physics from the University of Lucknow (India) in 1952; the Diploma in Electrical Communication Engineering from the Indian Institute of Science, Bangalore (India) in 1955; and the Ph.D. degree in Electrical Engineering from the Polytechnic Institute of Brooklyn (New York) in 1968.

# AMERICAN SOCIETY OF ENGINEERS FROM INDIA
# 1989 NATIONAL CONVENTION

## Entrepreneurial Awards

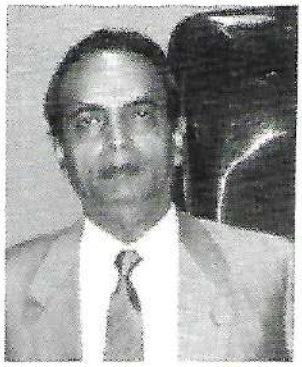
Mr. Prakash Krishnaswamy
President
EASI

Mr. Krishnaswami is President of Engineering Analysis Services, Inc. (EASi), a company he formed in late 1980 in response to the consulting needs in structural engineering. EASi is a progressive computer aided engineering firm that specialize in design and manufacturing aspects of structural engineering with specialized expertise in automotive engineering. EASi provides a wide range of computer-aided engineering services including linear and nonlenear finite element analysis, automotive structural and occupant crash simulation, investigation in to alternate materials including structural plastics and composites and comprehensive architectural engineering services.

EASi's unique strengths are: (1) an effective blend of automotive design and analysis skills using innovative approaches to integrate design with analysis resulting in compressed design cycle time; (2) a management that is progressive, resourceful and well informed on contemporary automotive business and technical issues relating to productivity and time cost effectiveness.

The company has grown to a staff of over 65 consulting engineers, most having master's or Doctorate degrees, with specialization in computer-aided engineering.

EASi recently has announced that the company will be marketing and supporting TATA-MICRO-PIPE in the North American market. TATA-MICRO-PIPE is a software program that brings computer-aided piping engineering, including piping wall thickness calculations, process flow diagrams (PFD), piping and instrumentation diagrams (PID), scheduling, valve bill of materials and pressure drop analysis to IBM compatible personal computers.



Dr. Kant Kothawala
President
EMRC

Dr. Kant Kothawala is president and founder of Engineering Mechanics Research Corporation (EMRC). Beginning as a small engineering software and consulting company in January 1973, EMRC is now considered a world leader in its field.

During 1973-1975, EMRC built a solid reputation as an engineering consulting firm, providing clilents with original and accurate solutions more quickly and affordably than competitive companies.

Today, EMRC is recognized as an international center for engineering software and consulting with its NISA II programs currently used by more than 2500 organizations worldwide. The company's consulting customers include some of the largest multinational corporations such as Ford, GM, Lockheed, British Aerospace, Fiat, Sony, and Nissan.

EMRC provides support to its clients through EMRC offices in Michigan, California, Japan, Korea, and England, and through an extensive global netword of sales and support representatives in more than 35 countries.

Over 150 R&D and application engineers work at EMRC involved in the development and support of software products and providing expert consulting services. With more than 45 Ph.Ds. and 67 M.S. level scientists, engineers and analysts continuously developing and upgrading the program, EMRC consistently produces some of the most sophistivated engineering software programs available.

# AMERICAN SOCIETY OF ENGINEERS FROM INDIA
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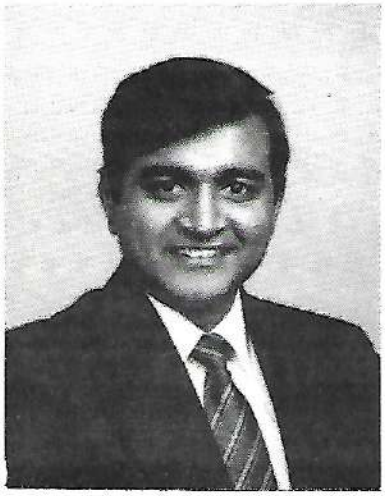
## Engineering Excellence Award



Dr. Bharat Bhushan is an internationally recognized expert and a pioneer in the field of tribology and mechanics of magnetic storage devices. He received his M.S. in Mechanical Engineering from Massachusetts Institute of Technology, M.S. in Mechanics and Ph.D. in Mechanical Engineering from the University of Colorado at Boulder, and M.B.A. from Rensselaer Polytechnic Institute at Troy NY. Dr. Bhushan is a registered professional engineer (Mechanical), and has authored or co-authored 2 technical books, more than 100 technical papers in referred journals, more than 60 technical reports, and more than 15 articles in IBM Technical Disclosure Bulletin. He holds 4 U.S. patents and has delivered numerous invited lectures at the National and International conferences and Universities. He organized the first symposium on "Tribology and Mechanics of Magnetic Storage Systems" in 1984, and continues to organize and chair it annually. He serves on the editorial board of Journal of Tribology and is national officer of several professional societies,industry and U.S. Government agencies. He is a senior member of IEEE and a fellow of ASME and the NY Academy of Sciences.

Dr. Bhushan has worked at Massachusetts Institute of Technology, Automotive Specialists, Mechanical Technology Inc., SKF Industries Inc., IBM Corporation at Tucson AZ. and as manager of Head-Disk Interface group at the IBM Almaden Research Center in San Jose CA.

Since January 1989, Dr. Bhushan is a visiting scholar at the University of California at Berkeley where he teaches graduate courses and directs Ph.D. students and post-doctoral fellows.

## Outstanding Student Award

Harshvardhan Karandikar is a Ph.D. candidate at the University of Houston. He received his bachelor's degree (B.Tech.) in Mechanical Engineering from the Indian Institute of Technology, Kanpur, India, in 1984 and M.S.in Mechanical Engineering from the University of Houston in 1986. He is a member of the System Design Laboratory in the Department of Mechanical Engineering and is currently working on his dissertation titled "Hierarchical Decision Making for the Integration of the Design and Manufacturing Process". Mr. Karandikar has accumulated considerable work experience during his academic pursuits and has worked for Technical University of Denmark, Lemmerz-Werber of West Germany, University of Houston, B.F.Goodrich Co. and the TATA Companies in India. His research interest includes decision based design, concurrent engineering, multiobjective optimization, and the design of the composite material structures. Upon graduation in December 1989, Mr.Karandikar is interested in working in an industry-oriented research program and is exploring opportunities in academia and industrial research and development organizations.

## Outstanding Community Service Award

The Bhartiya Family Services is a social service organization whose purpose is to advocate for and provide social, educational and mental health services to people of Indian Origin. It is aimed specifically for meeting special needs of people of Indian Origin.

In the event of any personal crisis in India, strong support from a large number of relatives would be available to help cope with such crises. However, Indian families living in this country may not have such support available.The Bhartiya Family Services was founded on the belief that the Indian community can and should provide emotional, financial and material support, as well as proper guidance to such families to cope with personal crises.

Since its inception in 1986, the organization has served the community in time of need, as an "extended" family by identifying cases in need of help and providing financial, emotional and counseling support as well as legal help in a confidential manner.

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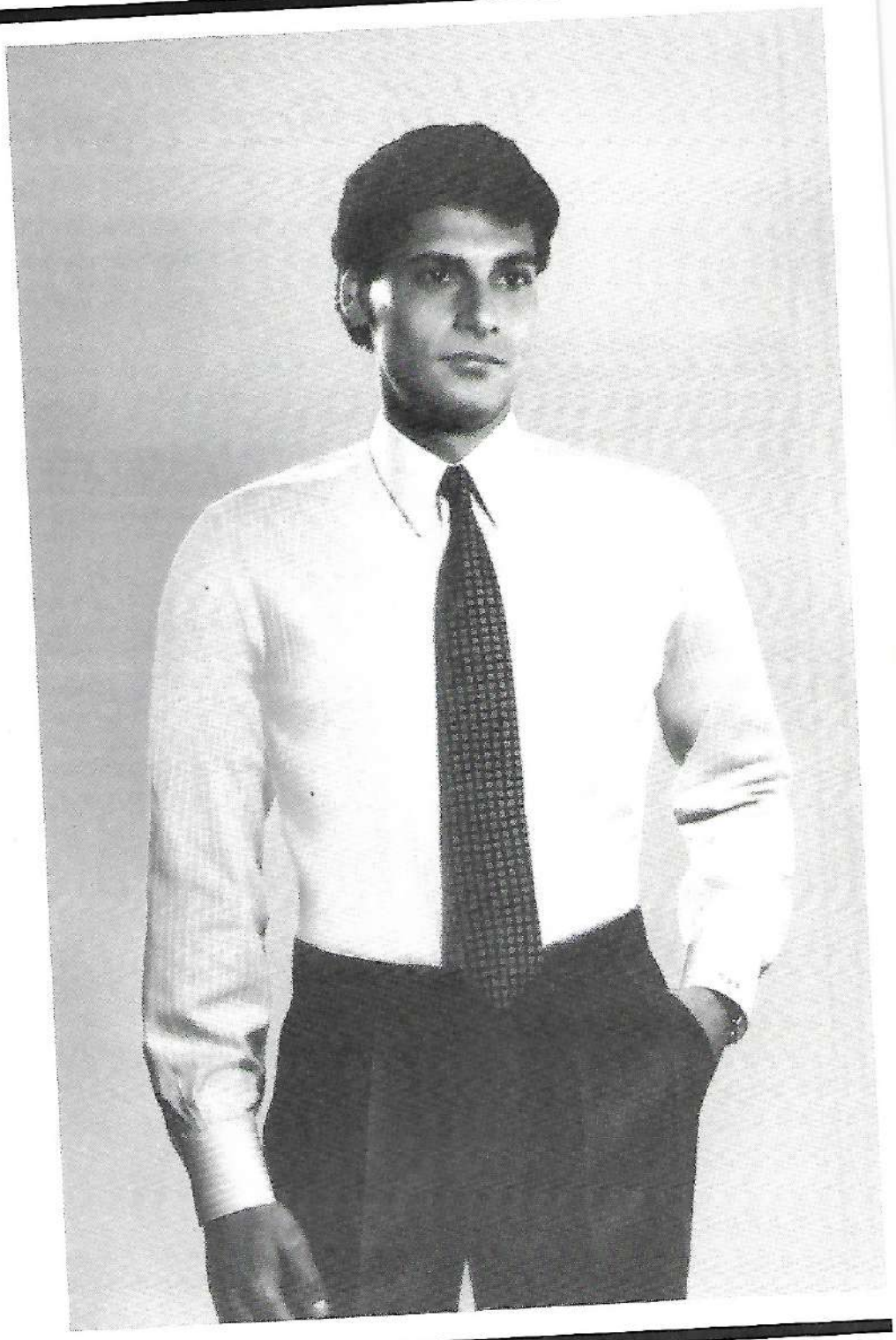

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# SESSION B

# PATHS TO PROGRESS

**Chairperson:**

**Mukul M. Mehta**

If you do not succeed at first, try and try again. People who succeed not only try harder, but they work smartly in a disciplined, diligent manner. Indian engineers have carved out an excellent reputation in most large corporations by their superb grasp of engineering fundamentals, and their innate ability to come up with innovative solutions to difficult technical problems. The same methods and principles can be applied in a broader arena of career development, personal development, or self growth in a corporate or business environment; however, the issues are very different, rules of the game still foreign to many of us.

Career advancement and personal success are the goals of most engineers. Some will achieve their goals, but many will fall short. Even though they are ambitious, intelligent, and talented engineers, they will not know how to make the best use of their capabilities or of the advancement opportunities around them. Similarly, organizations will fall short in fully developing the potential capabilities in their engineering staff due to ineffective or nonexistent professional development and career advancement programs. This session is intended to examine various strategies that can help individuals successfully achieve the most from their career advancement opportunities and make maximum use of their capabilities.

**Mr. Mukul M. Mehta** obtained his Bachelor of Chemical Engineering degree from the Department of Chemical Technology, University of Bombay; Master of Science degree in Chemical Engineering and Master of Science degree in Statistics from Ohio State University.

Mr. Mehta worked for three years as an independent consultant in Bombay, India before joining the B. F. Goodrich Company as a R&D Statistician.

Since then, Mr. Mehta has held various positions including Supervisor, Manufacturing Statistical Support, and Manager New Process Evaluation. Currently, he is Manager of Statistics and Computer Aided Research.

# B-1: PATHS TO PROGRESS

## ALTERNATIVE PATHS FOR ENGINEERS

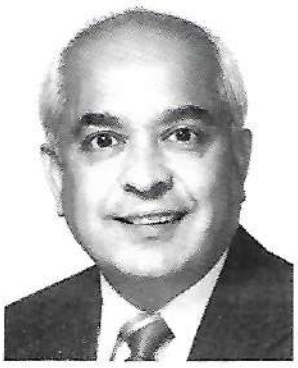
**Pradeep Mehra**

Although there are a wide range of **Paths to Progress** within the engineering profession, engineers can consider several alternatives outside the basic profession. Many engineers obtain a Masters of Business Administration to improve their management skills and widen their horizon. Mr. Mehra will discuss the leveraging of this secondary degree to advancing in different professions.

The most important part of an engineering education is probably the learning of a logical and systematic process of thinking. It is this basic underlying strength which can be used to move into almost any discipline or profession of one's choice -- Finance, Business Planning, Sales and Marketing, etc. The critical factor is interest; interest in the subject, and most importantly, interest in the style of life. The engineering background provides a solid foundation and a strong resource.

Technology is playing a bigger and bigger role in today's generation of products and processes. This cuts across all businesses and walks of life. It will require people in every facet of the business -- Finance, Business Planning, Sales and Marketing, etc. -- to understand this behemoth if they are going to harness it, manage it, and gain a competitive edge through it. An engineer, with an appropriate secondary degree, is particularly qualified to play a leading role in each of these disciplines. It is his or her competitive edge. Most large corporations not only recognize this, but are aggressively pushing it.

Mr. Mehra will discuss his personal experience to illustrate some of the benefits of being an engineer in the finance group of a large company.



**Mr. Pradeep Mehra** is the Financial Control and Estimating Manager, Product and Manufacturing Engineering Staff at Ford Motor Company. He joined Ford as a Manufacturing Engineer in 1966 and has held several positions in the financial analysis and control activities of manufacturing, sales, product development and joint ventures.

Mr. Mehra graduated from Roorkee University with a Bachelor of Engineering (Honors) degree in Mechanical Engineering in 1964. He obtained his Master of Science degree in Industrial Administration from Purdue University's Krannert Graduate School of Management in 1966. Mr. Mehra was awarded the Chancellors Gold Medal for the Best Student at Roorkee University and was selected Krannert Scholar at Purdue University.

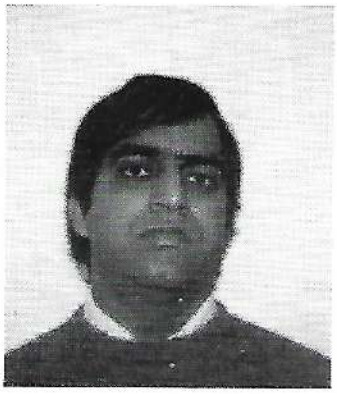
# B-2: PATHS TO PROGRESS

## NO GOAL TOO HIGH

**Vinod Gupta**

Mr. Gupta will discuss, from his personal experience, what are the attributes for success as an entrepreneur in the private sector. This discussion will include:

- What does it take to get into business.
- What are the avenues for finances and how to go about getting it.
- What obstacles to expect and how to overcome them.
- His personal experience in the last fifteen years and reasons for his success.



**Mr. Vinod Gupta** obtained his Bachelor of Science degree in Metallurgy from Michigan Tech and his Master of Science degree from Case Western University.

He started his career with Gould, Inc. as Research Engineer in 1976, and in 1979 at the age of 27, was appointed as the Director of Operations of the $40 million Brake Division in St. Louis -- youngest director in Gould's history. In 1981 Mr. Gupta joined Condec as General Manager, and in 1984, bought Technocast from Condec by a leverage buy out. In four years he has brought the company sales from $2 million per year to over $8 million per year, and from an $100,000 per month loss to a 7 percent before tax profit. The debt equity ratio that started out as 27 to 1, now stands at a very enviable 1 to 1.

Mr. Gupta is President of Technocast and has already started the expansion of his business by acquiring Nico-Alloys.

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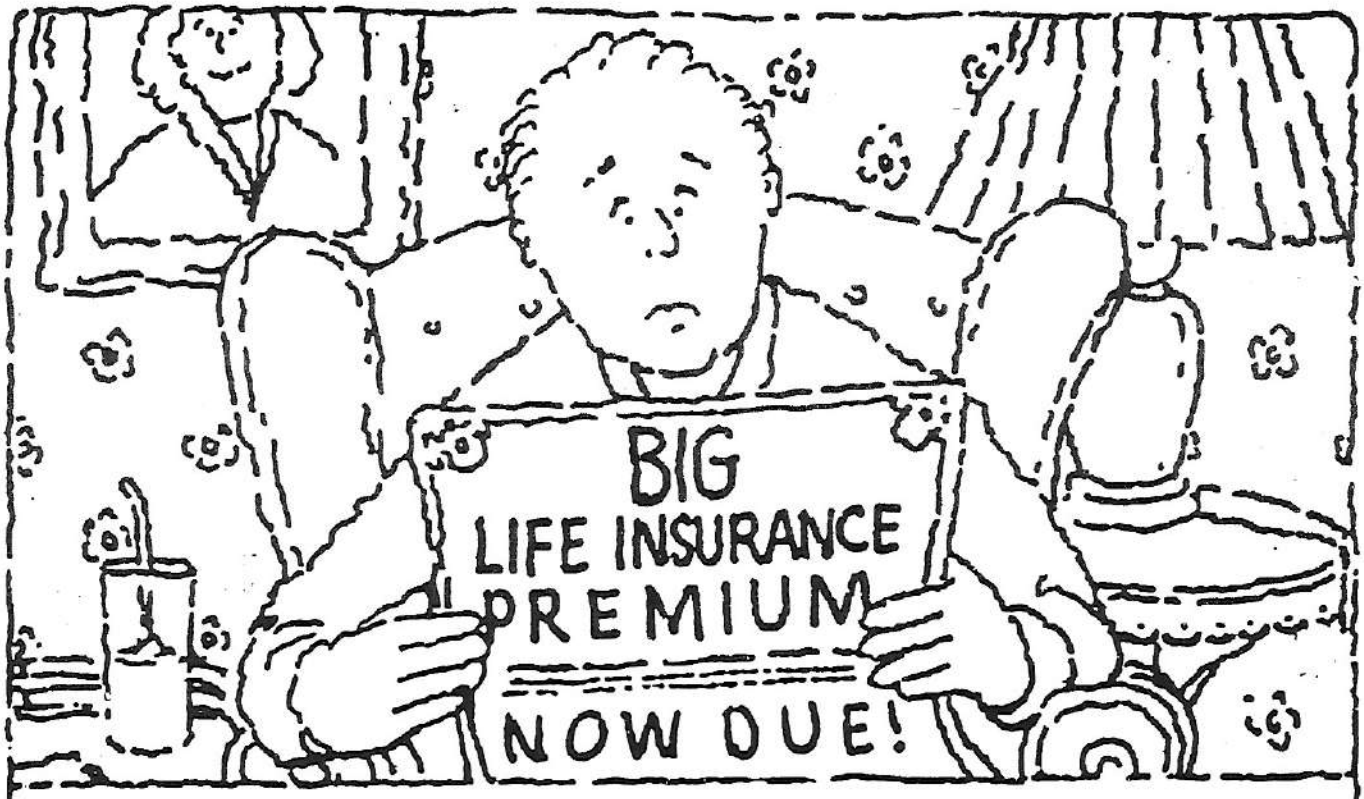


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# B-3: PATHS TO PROGRESS

## BARRIERS IN THE PATH TO PROGRESS

**Jag Bushan Kaul**

During the past 200 years, the United States has served as a great melting pot for people from widely varied cultural backgrounds. Immigrants from all countries have had to contend with a certain degree of difficulties based on racial and cultural differences which did not fit the "norm" for American society. There are other perceived barriers such as experience, education, resistance to change, personal characteristics and communication skills which must be overcome in order to progress in the corporate hierarchy. Successful people consider these barriers as challenges knowing that they can be overcome. Do not allow these barriers to prevent you from achieving your goal.

### I. CULTURE/SOCIAL BEHAVIOR

It is essential to adapt to the corporate culture in order to achieve professional success. Personal adjustments in behavior and social interactions will be required

### II. PERSONAL CHARACTERISTICS

Personal characteristics are helpful and often essential in making progress on a career path. There are characteristics of good leadership necessary for smooth interaction with peers, subordinates, superiors and customers. All characteristics save physical ones, can be learned and/or improved at any time, and should be considered part of your continuing education.

### III. EDUCATION/EXPERIENCE

How well are you suited to meet current and future demands of the company? Some people are not interested in learning anything new that will force them to change; however, continuing education is required in order to keep pace with the ever-changing business environment.

### IV. RESISTANCE TO CHANGE

Although it is a normal tendency to resist change, it must be judiciously controlled so as not to impede growth for the good of the corporation and for personal well-being. One must resist the temptation to become clannish which would prevent cultural assimilation.

### V. COMMUNICATION SKILLS

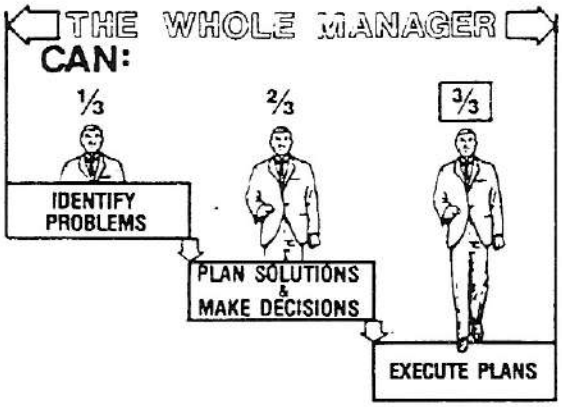
Lack of fluency in the language is a great impediment to effective communication. Proficiency in itself, however, is not adequate if you have a strong accent which makes it difficult for you to be understood.

Most Asian Americans with accents have a tendency to ignore this deficiency. They do not realize that this barrier has a subtle but real impact on their progress in the corporate world. It is strongly recommend that you consider attending seminars and group lessons offered by organizations like **SPEAK WELL, INC.** Most corporations encourage their employees to attend these courses by covering expenses. Continuous improvement is the name of the game in this highly competitive world. Do not expect corporations to help you if you do not want to help yourself.

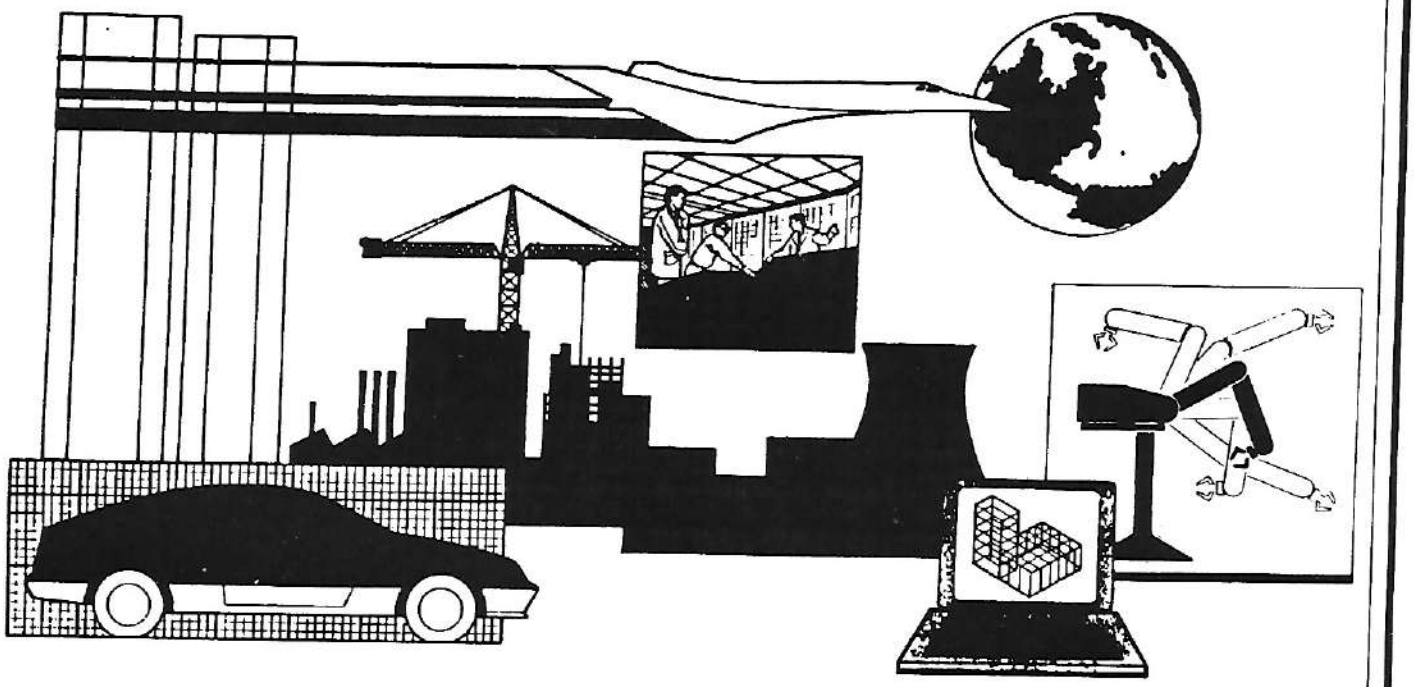
## CONCLUSION: BE A WHOLE MANAGER

In every aspect of your job, be a whole manager. Being a whole manager means more than accepting the responsibility for directing the activities of subordinates. It requires the ability to be incisive in determining where problems exist, weighing options and deciding on a course of action, and directing the implementation of the plan. To become that complete manager, it will be necessary to conquer the cultural and personal barriers which I have outlined in this presentation.

Remember, barriers are not obstacles, but stepping stones in the path to progress if you approach them in a logical and objective manner. Accept the challenges that they present and proceed on a course of personal improvement and career enhancement by conquering each problem as it arises. Take every opportunity to correct accent and language deficiencies in order to improve overall communication effectiveness. The reward for perseverance is a successful career.




**Mr. Jag Bushan Kaul** obtained his Bachelor of Science in Mechanical Engineering from Kashmir University, and his Masters of Business Administration in Management and Finance from the University of Scranton, Pennsylvania. He is currently the Manager of Quality Assurance at the Detroit Arsenal Tank Plant, General Dynamics Land Systems Division, where he is responsible for the total Quality Program of the M1A1 Abrams Main Battle Tank. His previous positions included Chief Quality Evaluation, Chief Quality Engineering, and Quality Systems.



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# B-4: PATHS TO PROGRESS

## A NON-ENGINEER'S VIEW

**Jamil Akhtar**

**Mr. Jamil Akhtar** is associated with the law firm of Fitzgerald, Hodgman, Cox, Cawthorne & McMahon. He has a Bachelor of Science degree in Economics from Wayne State University and a Juris Doctorate degree from the Detroit College of Law. Prior to becoming a lawyer, Mr. Akhtar was the Assistant Wayne County Executive under William Lucas. While employed with Wayne County, he was the Interim Director of the Office of Public Services; his duties included the supervision of all engineering departments of the Wayne County government.

Mr. Akhtar will discuss his observations concerning critical elements required for progress. His views will bring a new dimension to the discussion as he is involved with the engineering community, but he is not an engineer!

Mr. Akhtar is 47 years old and was born in Detroit, Michigan in 1941. His late father, Jamil Akhtar, Sr., was a graduate of the University of Detroit School of Engineering and was the Secretary of the Indian Independence League of America from 1943 to 1948.

The law firm of Fitzgerald, Hodgman, Cox, Cawthorne & McMahon represents several manufacturing and engineering companies, performing both corporate and labor relation services. Mr. Akhtar has lectured on minority leadership development and has served as an adjunct Professor.

# AMERICAN SOCIETY OF ENGINEERS FROM INDIA
# 1989 NATIONAL CONVENTION

# A Vote Of Thanks . . . .

This convention's success is largely due to the efforts of many, many volunteers who have worked behind the scenes for countless hours. ASEI and its Board of Directors want to express their thanks to all volunteers.

- Many thanks to those who assisted in the sale of tickets:

  Shashi Dani
  Paul Gill
  Noor Kapadia
  Jag Bushan Kaul
  Prakash Krishnaswamy
  Kanu Mehta
  Jai Prakash Shah
  Dr. G. S. Singhvi
  Lakshmi Vora

- A special vote of thanks to Ms. Pat Dermidoff and Ms. Sonia Swigart of Smith, Hinchman & Grylls for the professional convention signs and graphics.

- Thanks to all individuals and corporations who have supported ASEI by placing ads in this brochure.

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The Afzal and Munni team are "The People's Choice" because whatever song the audience wants, they have it at hand. Between them, they can sing more than 3,000 songs.

**ASEI** is pleased to present these accomplished singers at their **Sixth National Convention.**

# SESSION C

## STUDENT AFFAIRS

**Chairperson:**

Snehamay Khasnabis

Our seminar is directed towards the needs of young engineers and computer-scientists who are either striving to enter the job market or aspiring for further professional advancements. We have been fortunate to assemble for our seminar, representatives from the industry, academia, non-profit groups, and the legal profession who will address various topics pertaining to job search, marketing, visa requirements, industry needs, and the interface between technical and managerial functions.

We hope the seminar will be informative, stimulating and responsive to the needs of our target group. It may not provide all the answers, but it certainly will help our young engineers set specific directions toward the attainment of their career objectives.

**Dr. Snehamay Khasnabis,** Professor Department of Civil Engineering, Wayne State University, Detroit, specializes in the area of transportation engineering. He obtained a Bachelors degree from the University of Calcutta, and Masters and Ph.D. degrees in Civil Engineering from North Carolina State University.

Dr. Khasnabis has conducted research in the areas of highway safety, transportation systems and logistics, and extensively published his work in various journals. He has served as the Chairman, Department of Civil Engineering between 1983 and 1987, and is currently the Acting Director, Urban Transportation Institute, Wayne State University.

# C-1: STUDENT AFFAIRS

## NEEDS OF TODAY'S HIGH TECH INDUSTRIES

**Larry Berch**

Mr. Larry Berch is an EDS Manager of Systems Engineering Activities responsible for C4 (CAD/CAM/CAE/CIM) technology development at General Motors. He graduated with a Masters degree in Mathematics from Eastern Michigan University. During his twenty year career with GM and EDS, he has developed, implemented and supported a variety of C4 technologies. He has managed data management, graphics standards, geometric modeling and data exchange projects, as well as a wide range of applications.

Mr. Berch's presentation is entitled "**Needs of Today's High Tech Industries**". He will address the questions of what a corporation such as Electronic Data Systems (EDS) is looking for in today's engineers, computer scientists and technicians. He will focus on: ethical values, the importance of team concept, motivation, attitude and flexibility in attaining success in today's corporate environment.

# C-2: STUDENT AFFAIRS

## TRANSITION FROM A TECHNICAL CAREER TO A MANAGEMENT CAREER

**Vinod K. Sahney**

**Dr. Vinod K. Sahney**, Professor of Industrial Engineering and Operations Research (IE/OR), Wayne State University, holds a Masters degree in Mechanical Engineering from Purdue University and a Ph.D. degree in IE/OR from the University of Wisconsin, Madison. Since 1980, Dr. Sahney has also served as the corporate Vice President, Planning and Marketing, at Henry Ford Hospital. He specializes in Quality Control, Strategic Planning, Productivity and Management Engineering.

The topic of Dr. Sahney's presentation is "**Transition from a Technical Career to a Management Career**". Dr. Sahney, because of his current role with the Henry Ford Hospital, has to interact with medical professionals as well as administrators in the management of a major hospital complex. His University role as a Professor of Engineering requires him to educate graduate students in various aspects of management and engineering. Dr. Sahney will address the interface between engineering and management.

# C-3: STUDENT AFFAIRS

## IMMIGRATION LAWS

**Vicky Farah**

Ms. **Vicky Farah** is an attorney and counselor specializing in immigration and nationality laws. She holds a Bachelors degree from the University of Michigan and a Juris Doctorate degree from Wayne State University. She as been in private practice since 1981 and has represented a variety of corporations and non-profit organizations in Michigan and in the Midwest. Her office is located in Ann Arbor, Michigan.

The topic of Ms. Farah's presentation is "**Immigration Laws**". She will discuss current immigration laws and possible changes focussing on visa requirements in the United States, with particular emphasis on U.S. Non-Immigrant Visa. She is a member of the American Immigration Lawyers' Association and the Michigan Bar Association.

# C-4: STUDENT AFFAIRS

## ROLE OF EDUCATIONAL INSTITUTIONS IN AN ERA OF CHANGING TECHNOLOGY

**William C. Taylor**

**Dr. William C. Taylor**, Professor and Chairman, Department of Civil and Environmental Engineering, Michigan State University (MSU), specializes in the areas of Transportation, Traffic Safety and Control. He holds a Ph.D. degree in Civil Engineering from Ohio State University. In the past, he has also served as the Science Advisor to the Governor of Michigan; Director of Interagency Transportation Council; Associate Dean of Research, College of Engineering, MSU; and Professor of Civil Engineering, Wayne State University.

The topic of Dr. Taylor's presentation is "**Role of Educational Institutions in an Era of Changing Technology**". Dr. Taylor has also been associated with a number of universities in India and maintained his relationship with these institutions. He has thus developed a multi-national perspective toward higher education. He will discuss the evolving changes in engineering practice and the role of universities.

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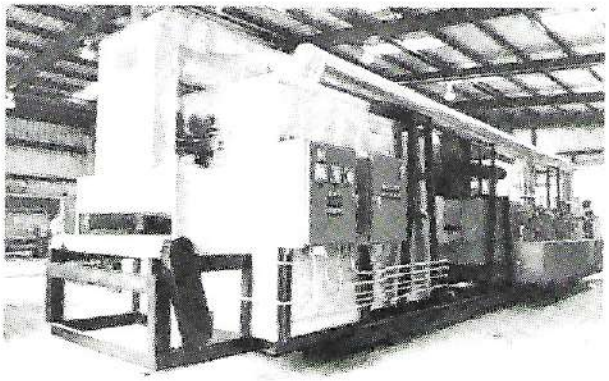

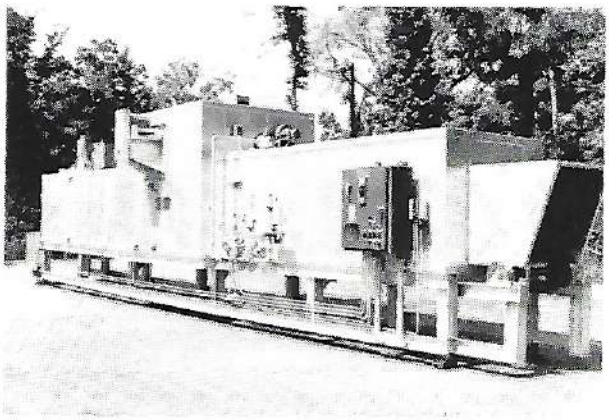

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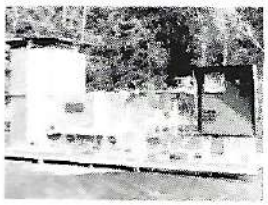

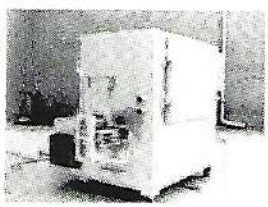
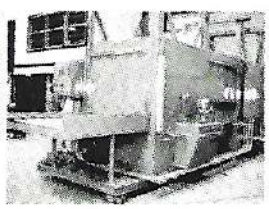
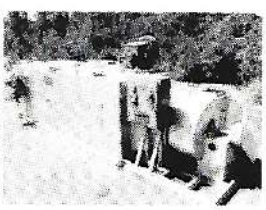

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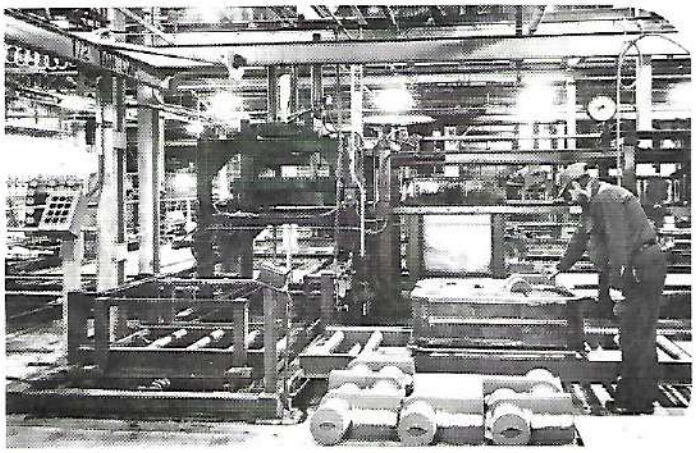

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