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**Opportunities &
Challenges of
Globalization
2005**



**22nd Annual ASEI Convention
Ohio Chapter, Cleveland, Ohio**

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SHOULD WE FEAR GLOBALIZATION?

Hira L. Fotedar,
Chairman, WINOC (Northeast Ohio Council), Cleveland OH
and
President, Fotedar Associates, Avon Lake, OH

Globalization presents many challenges and opportunities to businesses as well as to workers around the world. This is primarily driven by low cost of labor available in developing countries in South East Asia, Eastern Europe and Latin America. As a result of this many industries in the USA and Western Europe are moving their manufacturing operations to mainland China and other low cost countries to take advantage of low cost of labor and raw materials. Many industries are also opening up engineering centers in India in order to take advantage of ready-made pool of English speaking engineers and technicians in India.

HISTORICAL PERSPECTIVE

In the United States many people including engineers of Indian origin may be afraid of Globalization and wonder what impact it will have on their jobs, aspirations and careers. It is therefore important to look at the phenomenon of Globalization from a historical perspective. The fact is Globalization is not a new phenomenon. It has been with us for thousands of years. It began first with the Globalization of trade through Silk Road and dissemination of IDEAS through the spread of religions such as Hinduism, Buddhism, Christianity and Islam. Another form of Globalization has also been through conquests and colonization starting from Alexander the Great, conquest by Romans, Chengiz Khan and Arabs followed recently by the British Colonization of India and North America as well as the Spanish colonization of South and Latin America.

Each of these colonization and invasions are replete with their own successes as well as horror stories. British colonization of India did enslave us for nearly 200 years but it also gave us fluency in English language, knowledge of western business and legal system, a good educational system and a civil service for governance. This is allowing Indian engineers and businessmen to compete globally. Since the early sixties Indian

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engineers, scientists, academicians, IT professionals and businessmen have been contributing to the growth of Industries in the United States and India. Indian management thinkers are changing the face of American business is discussed by Stuart Rainer and Des Dearlone in July/August 2005 Across the Board magazine article entitled "The Indians are Coming". The authors describe the rise of business gurus such as, CK Prahalad, of the University of Michigan, Ram Charan, Rakesh Khurana, Nitin Nohria, Krishna Palepu of Harvard, Deepak Jain and Mohanbir Sawhney at Northwestern and Raj Reddy at Carnegie Mellon. Similarly Indians occupy corner offices of world's top corporations. For example Arun Sarin at Vodafone, Pepsico President and CFO Indira Nooyi and venture capitalist such as Vinod Khosla and Gururaj Deshpande influence the funding and creation of new businesses and industries.

What is driving the rise of Indian thinkers and entrepreneurs is the fact that Indians have a strong work ethic, speak English, have had the opportunity to work in a diverse multicultural environment in India and have been strongly influenced by American and British education system.

CURRENT STATE

What is different in the current version of Globalization is summed by Thomas Friedman in his book *The World is Flat*, as described in the September, 2005 issue of *Fortune Magazine*

"The fall of the Berlin Wall, the rise of internet, and the ever more inoperable nature of the software have created a newly flat global, political, economic and cultural landscape that allows people previously cut off from the centers of power and of affluence to join right in on the moneymaking and opinion forming as long as they have the skills and the gumption and the broadband connections".

The consequence of this wave of globalization is awesome. For example three million U.S manufacturing jobs have been lost in the past five years and it is expected that another six million will be lost in the next decade By 2015 it is expected that China will be leader in Autos and information technology while India will capture leadership in software and high finance. So where does this leave American business? It is expected that as India and China modernize they will need more high technology exports from United States creating jobs and driving innovation in high technology industries in this country. For example last year 22% exports to China were of high technology up from 14% a decade earlier. Mainstream economists think that the full entry of China and India into the global economy is a plus for the U.S as a whole. For example off shoring of computer software and services will add \$124 billion to U.S gross domestic product by 2008 by lowering inflation and interest rates and by increasing productivity. Mckinsey Global Institute estimates that America gains \$1.14 for each dollar of output it sends off shore

FUTURE STATE

I believe Globalization is going to be a win- win for America and other countries. Indian engineers should welcome and accept Globalization wholeheartedly as it plays to our strength and creates opportunities in the U.S as well as in India. However to compete in this environment technology savvy Indian Engineers need to develop managerial and leadership skills such as:

- * Take responsibility for your actions
- * Having respect for others
- * Trusting people and returning their trust
- * Have highest ethical standards and integrity
- * Showing discipline and stick-to-it-ness
- * Working together with others to achieve common goal.
- * Master the art of good communication.
- * Learn from role Models
- * Always be positive
- * Be socially responsible

Indian Industries and business houses will also need to adopt and adapt to western management and governance techniques such as:

- * Visionary Leadership
- * Customer Driven Excellence
- * Organizational and Personal Learning
- * Valuing Employees and Partners
- * Strategic Agility and Sense of Urgency
- * Focus on the Future
- * Managing for Innovation
- * Management by Fact
- * Social Responsibility
- * Focus on Results and creating value
- * Systems Perspective

Finally Indian Industries will have to change the “Chalta Hai” mindset and commit to the highest standards of quality, ethics and integrity as well as respect for people and practice good citizenship to thrive in a globally competitive environment.

**The U.S. House of
Representatives recognizes the
Indian-Americans and specially
the IITians for their contributions
to the United States of America.**

In the House of Representatives, US,
April 26, 2005.

Whereas the United States is deeply enriched by its Indian-American residents;

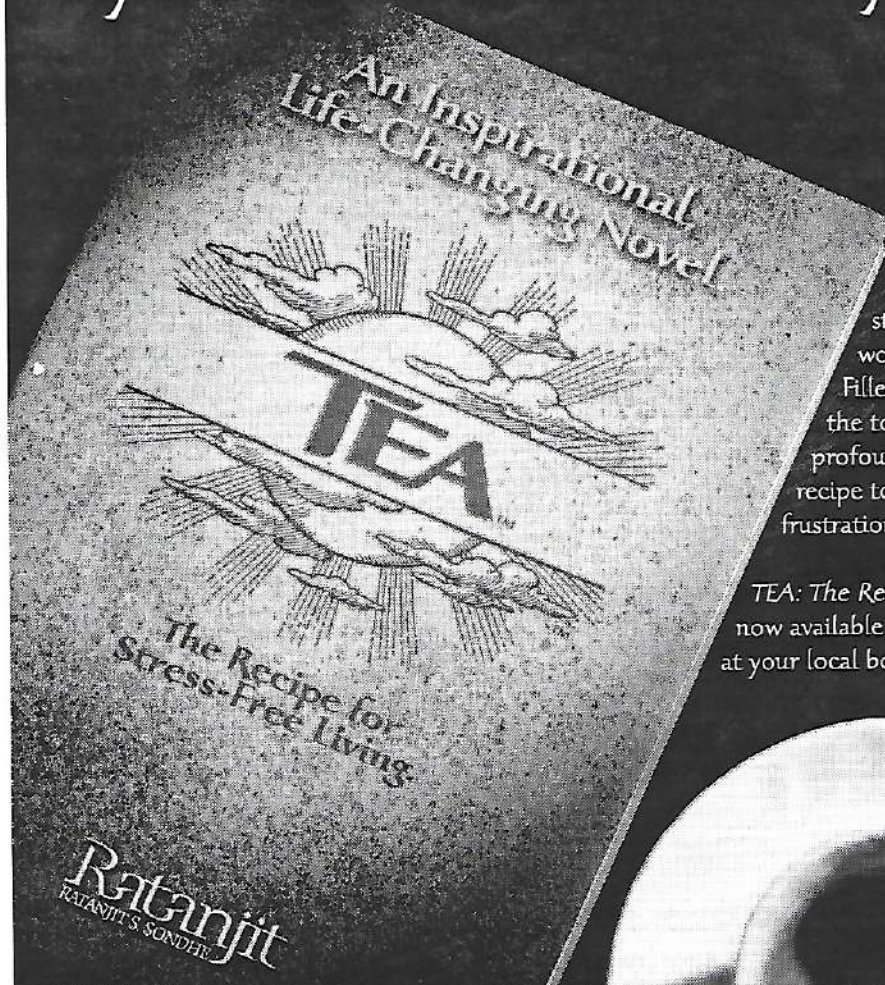
Whereas the Indian-American community and the graduates of the Indian Institutes of Technology (IIT) in the United States have made valuable and significant contributions to society in every profession and discipline; and

Whereas IIT graduates are highly committed and dedicated to research, innovation, and promotion of trade and international cooperation between India and the United States: Now, therefore, be it

Resolved, That the House of Representatives--

- (1) recognizes the valuable and significant contributions of Indian-Americans to American society;
- (2) honors the economic innovation attributable to graduates of the Indian Institutes of Technology; and
- (3) urges all Americans to recognize the contributions of Indian-Americans and have a greater appreciation of the role Indian-Americans have played in helping to advance and enrich American society.

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OUR 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 the 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

STUDENT AFFAIRS

- Providing guidance to students
- Establish Merit Scholarships
- Assist in practical training and job placement

ORGANIZATIONAL MATTERS

- Establish a national office
- Establish an editorial board and publish quality newsletter
- Increase membership
- Publish membership directory
- Increase awareness of ASEI
- Facilitate local chapter meetings

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 (non-resident Indians)

LIAISON WITH INDIA

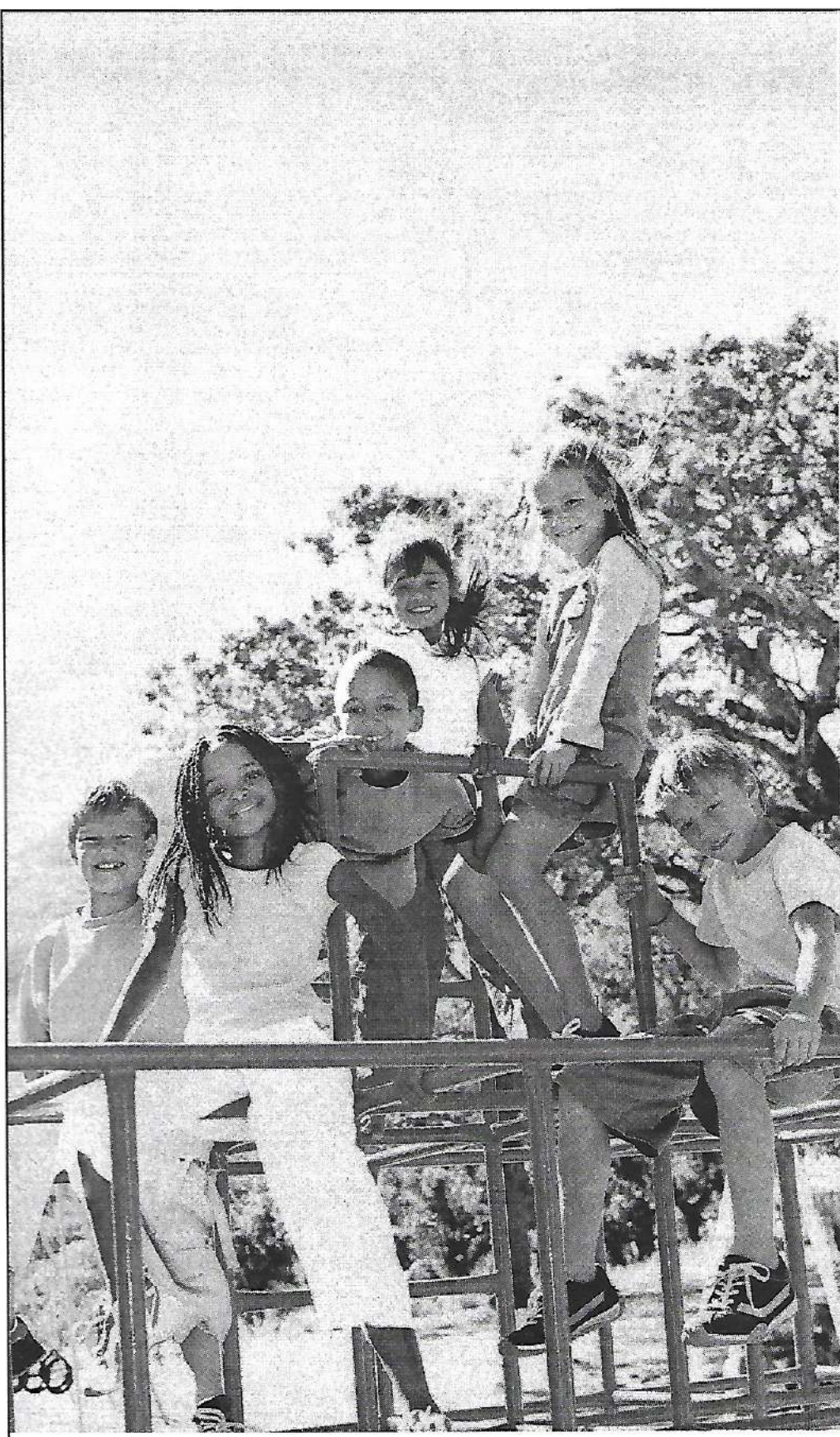
- Establish working relationship with government and private organizations in India

CONVENTIONS AND AFFILIATIONS

- Conduct conventions throughout the 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



For opening minds and building a better tomorrow, we congratulate the American Society of Engineers of Indian Origin.

The things
we
share
in our world
are far more
valuable than
those which
divide us.

— M. Gandhi (1869 - 1948)



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United States Senate

WASHINGTON, DC 20510-3504

ENVIRONMENT AND
PUBLIC WORKS

CHAIRMAN, SUBCOMMITTEE ON CLEAN AIR,
CLIMATE CHANGE AND NUCLEAR SAFETY

ETHICS

CHAIRMAN

FOREIGN RELATIONS

HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS

CHAIRMAN, SUBCOMMITTEE ON
OVERSIGHT OF GOVERNMENT MANAGEMENT
THE FEDERAL WORKFORCE AND
THE DISTRICT OF COLUMBIA

IN RECOGNITION OF
**THE AMERICAN SOCIETY OF
ENGINEERS OF INDIAN ORIGIN
OHIO CHAPTER**

Hosting Its

22nd ANNUAL CONVENTION

I am honored to welcome the members of The American Society of Engineers of Indian Origin (ASEI), Ohio Chapter, as they host their 22nd Annual Convention at the Corporate College in Cleveland. The theme for this year's convention is *Opportunities and Challenges of Globalization*.

ASEI is an international non-profit professional organization of engineers, students and professionals pursuing the "enhancement of technical, professional, educational, and economic benefits to its members, paving the way for global networking and exchanging knowledge with other countries."

I would like to recognize ASEI National Chairman, Jag Kottha; Convener and Chair, Hira Fotedar; the President of Ohio Chapter ASEI, Satish Parikh; and all of those who worked so hard to make this event possible. I extend my best wishes for an enjoyable evening and continued success to ASEI in the future.

On this 24th day of September 2005:



George V. Voinovich
United States Senator

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Best Wishes

to

ASEI

for your

Twenty Second

National Convention

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SHERROD BROWN
THIRTEENTH DISTRICT
OHIO

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SUBCOMMITTEE ON
TELECOMMUNICATIONS AND THE INTERNET

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AND CONSUMER PROTECTION

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ASIA AND THE PACIFIC

Congress of the United States
House of Representatives
Washington, DC 20515

September 24, 2005

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Hira Fotedar
American Society of Engineers
of Indian Origin
2005 ASEI Convention
Corporate College East
Cleveland, OH

Dear Friends:

My best wishes to the American Society of Engineers of Indian Origin (ASEI) during your convention in Cleveland.

India is one of the United States' most important allies in the world, and one of the world's leading democracies. India is a wonderful mosaic—a nation of peoples from many regions and many religions. It is a nation representing the diversity and freedoms that are the legacy of democracy.

We must celebrate these strengths and acknowledge the ASEI's role in forging the strong bonds between our countries.

Across our great nation, we should all celebrate the accomplishments of the Indian-American community. Excelling in all areas of business, science, arts, and literature, Indian-Americans contribute in significant ways to our nation's economic and cultural development.

The ASEI's commitment to developing a nationwide network of engineers of Indian origin and facilitating relations and technology transfers between the U.S. and India is unsurpassed. I am sorry I am unable to join you, but I congratulate you on your many successes.

Sincerely,



SHERROD BROWN
Member of Congress



BOB TAFT
GOVERNOR
STATE OF OHIO

**FROM THE OFFICE OF
GOVERNOR BOB TAFT
SEPTEMBER 24, 2005**

I want to extend my warmest greetings to the officers, members, and friends of the American Society of Engineers of Indian Origin as you gather for your 22nd Annual Convention at the Corporate College East in Cleveland, Ohio on Saturday, September 24, 2005.

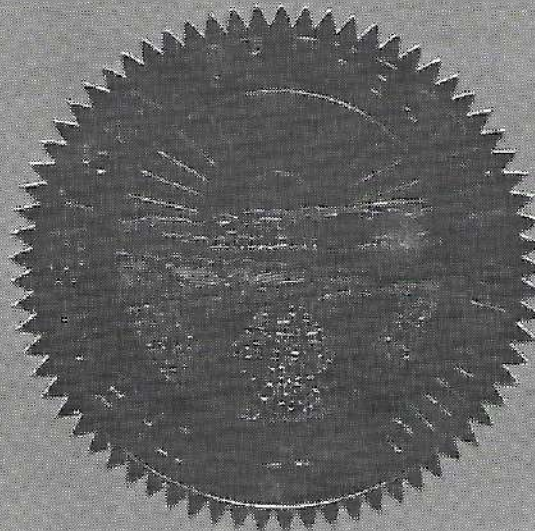
Ohio takes pride in its ethnic communities and we appreciate the ways in which Asian Indian Americans add to the diversity of our state. We recognize the unique contributions people of Asian Indian heritage make through their many professional, religious, cultural, social, educational, and civic organizations. Your dedication to the values of family, hard work, and education continues to add to the strength of Ohio.

I would like to salute Mr. Hira Fotedar, Convener and Chair of the 2005 American Society of Engineers of Indian Origin Convention, all other officers, trustees, members, families, and friends for their efforts toward the success of this program and for their contributions to the Asian Indian community and the State of Ohio.

On behalf of the State of Ohio, best wishes for an enjoyable and memorable convention.

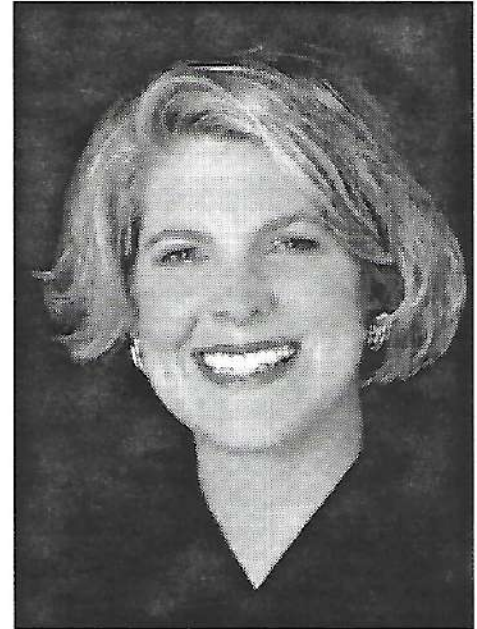
Sincerely,

Bob Taft
Governor





The City of Cleveland
Jane L. Campbell, Mayor



Dear Friends:

On behalf of the citizens of the City of Cleveland, it is an honor and privilege to welcome the 22nd Annual American Society of Engineers of Indian Origin Convention (ASEI).

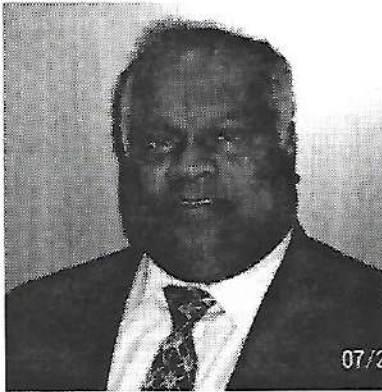
This year's convention theme is "Opportunities and Challenges of Globalization" which will focus on the importance of the vision of the American Society of Engineers of Indian Origin. I want to stress to all of you the importance of following the vision that ASEI sets forth because of the opportunity that would benefit the Ohio Chapter. The City of Cleveland is known for its international based residents and we are working at providing opportunity for our residents everyday to make Cleveland a better place to live, work and play.

Cleveland is home to outstanding museums, sporting events, parks, theaters, and trendy restaurants. From the Rock and Roll Hall of Fame, to the Cleveland Museum of Art, to Playhouse Square, and Jacobs Field the possibilities are endless. Cleveland also boasts magnificent shopping, dining, and site seeing in a central location. Whatever your interest, you'll find Cleveland is a city that has everything! I extend my best wishes for a successful convention.

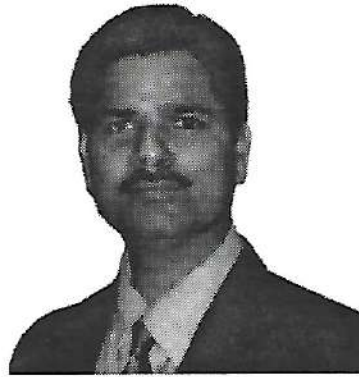
Sincerely,

Jane L. Campbell
Mayor

ASEI NATIONAL BOARD MEMBERS



Jag Kottha



Perry Mehta



Arvind Singhal



Darsh Aggarwal



Namrata Boveja



Ravi Sharma



Mahesh Reddy



Satish Parikh



Shikha Gambhir

*Other Board Members, Vipen Mehta, Ved Agrawal, Surajit Khanna,
Bharat Seoni and Suresh Gupta*

Message from
The Chairman
ASEI National Board



Dear Fellow Engineers:

First let me welcome you to the 22nd Annual ASEI National Convention, in Cleveland, Ohio and am sure that you will receive a good return on your time and money invested for this event. This is an opportunity to get off your day-to-day treadmill of life and energize your mind by networking with engineers and creating synergies by using your ultimate god given resource "the human mind".

ASEI's mission is spelled out in 3V's, "Value, Vision and Voice" and recently the Engineers of Indian Origin were acknowledged by the U.S. Congress for our significant contributions to society in every profession and discipline. The US Congress passed House Resolution 227 -- introduced by Congressman Tom Davis and co-sponsored by Congressman Bobby Jindal -- praising the stellar work done by Engineers in all walks of life-- the first time the US Congress has honored a foreign university in this manner. The Congressional debate ran live on CSPAN with speeches by several Congressmen on the IITs, and when the speaker brought it to vote, it was passed unanimously.

In my opinion, Engineers are the only professional in the society who reach the maximum number of people in their daily lives: It may be Food production, Housing, Medical services through Bio Technology, Natural Disasters and you name it. From this perspective, we need to feel very proud of value to the human population in general.

ASEI has been very busy in the last year in organizing and coordinating various activities related to Mobility Industry. We had arranged number of technical sessions for the visitors from India during the Auto Tech show in Detroit, Michigan and hosted a special meeting in honoring the visit of Dr. Chidambaram, Principal Scientific Advisor to the Prime Minister, Government of India for coordinating their core industry specific projects.

ASEI is proud to initiate the Corporate Excellence Recognition Program this year in Cleveland and will continue to offer that program to all other corporations nationally.

I need to say no more, but to keep your engines running and keep on adding value to this great country with a global perspective and encourage other engineers of Indian Origin to support ASEI by becoming an active member and creating ONE BIG VOICE.

Thanks for attending this convention and hope to see you with at least five of your engineer friend at the next convention.

Jagannadham Kottha, ASEI Chairman



Message from the Desk of National President:

Dear Fellow Engineers:

Since June 2003, it has been a great pleasure and pride to accept the responsibilities to serve one of the most reputed organizations – American Society of Engineers of Indian Origin (ASEI). I always wanted to get involved and take active participation in the organization, which supports the cultural heritage and professional activities. American Society of Engineers of Indian Origin has combination of both. As the National President, I would like to congratulate for the great support and dedication to the new Executive Committee Chairman Jag Kotha and Convention Chair Hira Fotedar and entire convention team. Also, I would like to extend my sincere thanks to the dedicated individuals and the entire convention committee to make this event possible and successful.

This is the 22nd anniversary; ASEI has come a long way and now committed to take a big leap entering as one of the most elite professional organization in the Country. I am proud to be part and leader of ASEI during this historical event. ASEI has accomplished several things last and this year such as Dr. Kalpana Chawala & Dr. Hans Bajaria scholarship, signing Memorandum of Understanding with the Society of Automotive Engineers, teaming up with the Engineering Society of Detroit and Project Management Institute and presenting the biggest 21st National Convention in Detroit in August 2004, distributing the highest amount in scholarship for engineering student in the history.

In additions to above successes, our vision and goals are very aggressive, and would like each and every one of you to join us to achieve those. We need to create STRONG voice of engineers who come from or associated with Indian Origin. During the tough economic times and even during the good days, we need each others support and assistance. As the National President, I am committed to build this bridge and would request everyone to join us to march success parade.

Goals and Vision for coming Years:

- Update website and keep it current – www.aseio.org
- Conduct awareness for engineering profession in community and society
- Get ASEI involved with several other local and national engineering organizations such as SAE, ESD, PMI, NSPE to receive more exposure and networking opportunities.
- Provide more and more opportunities for networking amongst engineers and family
- Increase the membership and active participation of members
- Encourage active participation from Woman, Young engineers and Student engineers
- Provide permanent home for the organization with local or toll free number and permanent address. We have decided to maintain PO Box address in Canton as permanent address for organization until the permanent office is located.

I appreciate each & every one of you for your participation and support of the 22nd Annual National Convention; however, we are at new beginning. Looking forward to see you all as the best supporters of ASEI in future. Let us know how would you like ASEI to achieve this journey and fulfill the goals.

**Perry Mehta
National President
September 24, 2005**

A Message from

THE CONVENTION CHAIR



Dear Delegates

It gives me great pleasure to welcome you all to the 22nd Annual ASEI Convention in Cleveland, Ohio. The theme of this Convention is **"Opportunities and Challenges of Globalization"**. These opportunities and challenges are quite familiar to Engineers of Indian origin. Since the 1960's, Indian engineers, scientists, academicians, IT professionals, entrepreneurs and intrapreneurs have been contributing to the growth of industries in the United States and India. However, the radical changes brought forth from the I.T. revolution of the 1990's have shown that this topic needs further exploration. The Globalization trend is altering the business landscape throughout the world as U.S businesses move their manufacturing to China and move software development and open engineering centers in India. These developments will have a significant impact on the careers and aspirations of Indian engineers as we help the economies of our adopted homeland and our Motherland become globally competitive. As the economies of these two secular and democratic giants become more interdependent, great opportunities will be created - for those who understand the market forces and are ready to seize the moment.

In this Convention you will be able to explore the technical, managerial and leadership skills needed to become successful in the era of Globalization. I urge you to network with your fellow engineers, explore new opportunities, forge new relationships - and have fun.

While in Cleveland, which has been named the All-American City, please take the time to visit the shores of Lake Erie, Rock, the Rock'n'Roll Hall of Fame, as well as the Cleveland Museum of Art - which has one of the largest Buddhist painting collection in the U.S from India and Tibet. For a quick and easy tour of the city, I highly recommend taking a "Lolly the Trolley" bus ride.

Finally my thanks to all-the convention planning committee, ASEI Leadership and all the volunteers, sponsors and supporters to make this convention a success.

Best regards

Hira Fotedar
Convention Chair
Chairman, WINOC (Work in North East Ohio Council)
President, Fotedar Associates

KEYNOTE SPEAKERS

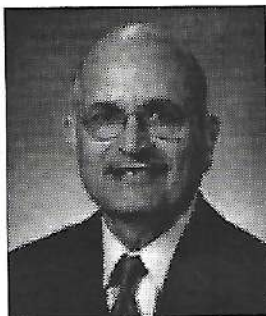
Plenary Session



Dr. Ramesh (Ray) Gehani, as the Director of Technology Management programs at the University of Akron, College of Business Administration, teaches and does research on the global competitiveness of innovative technology-intensive enterprises. He is a professor of International Business and Management, and a Fellow in the Center for Intellectual Property and a Fellow of the Fitzgerald Institute for Entrepreneurship. He was the Chairman of the Technology Management Section of the Institute for Operations Research and Management Science (INFORMS), a worldwide association of over 400 educators and executives involved with technology innovation and entrepreneurship. Dr. Gehani is a product of IIT Kanpur and IIT Delhi, and has a doctorate in Polymer Science and Technology from Tokyo Japan, and another Ph.D. in business from New York City. Dr. Gehani has solo-authored a seminal book on *Technology Management & Operations* (John Wiley & Sons, 1998) and published numerous papers on Management of Technology &

Innovation, TQM, Concurrent Engineering, and Leadership etc. in leading journals and other publications.

Luncheon Session



Dr. Arun Sehra, who is currently employed as the Director of Programs and Projects at NASA Glenn Research Center, has over thirty years of experience covering research, development, and management of propulsion system technologies for aircraft, rotorcraft, tanks, ships, and space crafts. Prior to joining NASA, from 1971 to 1998, he worked in five aircraft engine companies: Hindustan Aeronautics Ltd, General Electric, Allison Gas Turbine (now Rolls Royce), Textron Lycoming, and Honeywell. In his present capacity, he is responsible for providing executive leadership for advocacy, planning, and execution of all the GRC aeronautics and space programs and projects. In 2002, in recognition of his contributions to the U.S. Government and Aerospace industry, Dr. Sehra was awarded the prestigious Presidential Meritorious Rank Award. He has a Doctor of Science degree in Aero-Propulsion from the MIT and a Master of Engineering degree in Rockets and Missiles

from the Indian Institute of Science, Bangalore.

Banquet Session



Subodh Chandra just completed service as Director of Law of the City of Cleveland, a billion-dollar corporation. Chandra led the work of an 82-lawyer department with both criminal and civil divisions. He also served as acting Mayor in the Mayor's absence. As Cleveland's general counsel, Chandra slashed by nearly 90% spending on outside counsel. With a relentless focus on excellence and accountability, Chandra attracted top performers who helped make it the most diverse law firm in Ohio. As federal prosecutor, Chandra had successfully fought health-care fraud and corruption—work for which FBI director Robert Mueller recognized him. Before that, Chandra worked in large firms in both Cleveland and Los Angeles, and served as special presidential counsel at the American Bar Association. Chandra is a graduate of the Yale Law School, where he was executive editor of the Yale Law & Policy Review. He also graduated with honors and distinction from Stanford University. Stanford awarded him the John Gardner Fellowship to work with Governor Richard F. Celeste to train young leaders from newly

emerging democracies.

Program

Welcome and Plenary Session

Dr. Ray Gehani
University of Akron

Opportunities and Challenges of Globalization

Morning Technical Sessions

Automotive Research
Aerospace and Aeronautics

Luncheon Keynote Speaker:

Dr. Arun Sehra,
Director of Projects and Programs,
NASA Glenn Research Center

ASEI National Scholarships

Ramu Ramamurthy, Research Scientist, Eaton Corporation

Afternoon Technical Sessions

Bio-Technology and Bio Medical Systems
Career Growth Strategies
Reception and Banquet
Introduction of National Board
Chairman's Address

Banquet Keynote Speaker

Subodh Chandra

ASEI Awards

Entertainment by

The Manoranjan Group

TECHNICAL SESSIONS

MORNING SESSIONS

AUTOMOTIVE RESEARCH

CHAIR: DR. RAVI ROUT, Director of Testing, Ford Motor Company, Detroit, Michigan

Automotive Manufacturing



Steve Jacobs, Senior Test Engineer, Ford Motor Company, Detroit, MI
Jacobs Sverdrup, a wholly owned subsidiary of Jacobs Engineering, has over 7,000 employees and provides design/building/operation/ maintenance of test facilities for automotive, aerospace, and government agencies worldwide. The Drivability Test Facility (DTF) in Allen Park, Michigan is a prime example of the full range of services of advanced automotive test facilities provided by Jacobs Sverdrup. The DTF was designed and built in partnership with the Ford Motor Company. The DTF facilities are available for use by Ford and brokered

clients. DTF Node 8 is a full-scale aero-acoustic wind tunnel capable of a full range of aero acoustic and aerodynamic testing.

Quality System Auditing in the Global Environment



Steve Gazy, Vice President, GMS, Cleveland, OH.

Today's global economy is forcing companies to focus on core competencies. Outsourcing is one way a company can save working capital and avoid non-value cost associated with administration, sales, information technology, communications, maintenance, human resource, purchasing and quality. And while these activities are critical in supporting a company's core activities, they add cost and require on-going knowledge and expertise. This presentation will focus on the benefits of outsourcing Quality System Auditing

(3rd and 2nd Party) as a means of reducing risk, eliminating unnecessary cost and improving our understanding of a supplier's performance metrics.

Third-party Audits: A cost-effective way to build confidence in your suppliers.

Robert Stockweather, Program Manager, AQA. This presentation briefly outlines some of the benefits of third party auditing to customers in any industry. Specifically, this discussion will focus on the Aerospace Industry standard AS9100, used to audit suppliers to the Aerospace Industry's Original Equipment Manufacturers (OEM). Topics will include:

- (A) Different forms of audit (1st, 2nd, 3rd Party); uses and restrictions.
 - (B) Methodology of 3rd-party audits and certification; including issue and revocation of certificates.
 - (C) OASIS from the 3rd-party perspective.
-

International Business Expansion Strategies and Analysis



Milan Lathia, Business Development Manager, SHAFI, Inc., Brighton, MI Globalization provides organizations with tremendous opportunities as well as daunting challenges. International expansion has become a pervasive and prominent strategic response to global economic dynamics for a large number of companies. The success of such expansion depends on several of entry and cooperative strategies. In today's global village, it is difficult to segregate, isolate or focus any one market based solely on geography. The presentation analyzes the related strategies involved in International Business Development. Strategy forms the heart of the presentation and also looks at the different aspects of an organization that can benefit and get affected by such expansion. It presents the case where managers need to formulate appropriate expansion strategies to achieve a sustainable and successful presence in the global marketplace.

AEROSPACE AND AERONAUTICS

CHAIR: DR. RAMA GORLA, Head, Mechanical Engineering Department, Cleveland State University

Self Compensating Hybrid Duct and Attachment System



Jayant (Jay) D. Patel PhD, Senior Technical Fellow & **Peter Iyer**, Mission Integration Engineer, The Boeing Company, Long Beach, CA Depending upon temperature and pressure requirements ducts for Environmental Control Systems (ECS) are primarily fabricated from aluminum, composites or titanium alloys. Although it is imperative to fabricate lightweight, cost effective, nonmetallic systems with minimal tooling that are easy to assemble and align perfectly, the mismatching of interfaces of ducts still arise as a result of structural variations, accumulation of design

tolerances, variation of coefficient of thermal expansion of materials, and component stress factors. This has created a dire need for a technology to resolve all of these issues, still provide both reliable and superior thermal and acoustic performance, while also eliminating manufacturing recurring tooling cost and cycle time issues such as disposable plaster molds. The proposed technology introduced here provides for an innovative, low cost, self-compensating duct system for high temperature and pressure that not only meets but exceeds planned FAA regulatory flammability and smoke density requirements. Accommodating airplane variability with both damped vibration and noise, the proposed solution will provide superior flammability, reduced weight and performance enhancements at significantly lower costs.

Electronic Engine Control: Novel Approach for Reliability



Jayant (Jay) Patel, Senior Technical Fellow, **Sharanpal (Paul) S. Sikand**, Associate Technical Fellow, **Sham S. Hariram**, Associate Technical Fellow, The Boeing Company, Long Beach, CA

Reliability of Engine Electronic Controls (EEC) for airplane jet engines is critical for reliable and economic operations of the airplane. EEC failures can cause in-flight engine shut downs and airplane dispatch delays. The economic impact of this shortcoming is very large on the airlines, engine suppliers, and airplane manufacturers. Investigation of EEC failures has shown that a large number of failures occur due to thermal fatigue failure of solder joints on the circuit boards. Thermal cycling due to temperature excursions causes thermal Fatigue failures. A novel design of a hinge-less flapper valve can be used to control external cooling air to the EEC on jet engines. This reduces temperature excursions that electronic components and soldering are exposed to during flight and improves reliability.

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AFTERNOON SESSIONS

BIOTECHNOLOGY AND BIO-MEDICAL SYSTEMS

CHAIR: DR. BAIJU SHAH, President Bio-Enterprises, Cleveland, Ohio

Microsystems and Nanotechnology: A Toolkit for Medical Innovation



Shuvo Roy, PhD, Co-Director, BioMEMS Lab, Dept. of Biomedical Engineering, Cleveland Clinic Foundation, Cleveland, OH 44195 USA Recent advances in micro- and nano-technologies have resulted in the development of tools that promise to revolutionize healthcare. These tools will ultimately enable faster and accurate diagnoses for doctors as well more efficient therapies in patients. The BioMEMS Lab at The Cleveland Clinic is at the forefront of this exciting revolution with active projects in a variety of medical applications including heart disease, fracture repair, and kidney failure. The talk will focus on project highlights and outline the challenges that must be overcome for successful transition from the laboratory bench top to patient bedside.

Particle Image Velocimetry: Applications to Hemodynamics of Cardio-vascular Flows

Jaikrishnan R. Kadambi, Ph.D. Professor of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH, USA

A brief discussion of the application of Particle Image Velocimetry (PIV) method to understand the flow of blood through heart valves, coronary artery stents, carotid artery, centrifugal blood pumps and cerebrospinal fluid dynamics in endoscopic management of hydrocephalus is presented.

Systems Biology: A Buzzword or is it Here to Stay?



Sree Sreenath, Ph.D, Director, Case Western Reserve University, Systems Biology Initiatives Case Western Reserve University, Cleveland, OH, USA

The area of Systems Biology has been rejuvenated after a hiatus of more than thirty years. Unlike Biomedical Engineering that focuses primarily on building devices, Systems Biology involves the application of engineering methodologies to understand organizing principles in biology to ultimately impact the understanding and therapeutics in the medical field. The speaker will discuss the field and its importance to pharmaceutical and medical industries, and our efforts in this regard.

CAREER GROWTH STRATEGIES

CHAIR: PARAMJIT SINGH, *President, Productive Group, Inc., Cleveland, Ohio*

Personal Growth and Passion for Success



Ratanjit Sondhe, Chairman, Poly-Carb, Solon, Ohio

An inspirational speaker, educator, polymer scientist and author of the new book, *TEA: The Recipe for Stress-Free Living*, Ratanjit S. Sondhe speaks to individuals of all ages with life-changing messages of Universal Wisdom, Business Leadership & Ethics and Applied Spirituality. With a radio show and a television program broadcast around the world, Ratanjit delivers messages that teach how to live a more fulfilling life in harmony with Universal Truth and Principles. His simple yet profound words empower the mind and touch the soul.

Emigrating from India to America in 1968, Ratanjit founded an advanced-material science company, which operates according to a timeless, and modern-style leadership paradigm in which there are no bosses or titles, and team members are directed by the company's mission statement, operating principles and personal value systems. Having achieved worldly business success, Ratanjit has embarked on a path to help others achieve success through his lectures, radio and television programs, books and audio CDs.

Career Growth



Prakash "Krish" Krishnaswamy, CEO, Aerotek, Detroit, Michigan.

Krish is founder and President of EASi, a technology and engineering solutions firm that services the global automobile industry. Founded in 1981, EASi is headquartered in Madison Heights, Michigan and was recently acquired by the Allegis Group. Krish provides the strategic vision for the company. His areas of interest are strategic marketing, technology development, and the challenges of Globalization.

Krish holds an MS in Engineering Mechanics from the University of Missouri-Rolla and a BSME from the University of Bombay. In 1995, he received an Honorary Professional Degree from the University of Missouri-Rolla; the Entrepreneurial Award from the Governor of Missouri in 1994; an Entrepreneurial Award from the American Society of Engineers from India in 1989, and The Kiwanis Club award for Business Accomplishments in 1999. Krish was elected to the Academy of Mechanical Engineers in 2000. Krish is an avid photographer and enjoys reading and traveling.

ASEI CORPORATE EXCELLENCE RECOGNITION PROGRAM ENGINEER OF THE YEAR

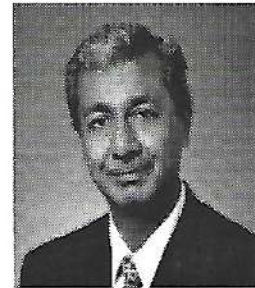
FINALISTS (RUNNERS UP)



Abhidnya Joshi



Raviraju Chilukuri



Dr. Atul Jain

WINNER



Jayant D. Patel

Jay Patel is a Technical Fellow at The Boeing Company with expertise in composites and plastics technologies. He is corporate advisor for elastomers and an industry leader in developing state-of-the-art designs, new materials and process technologies. Jay holds 21 patents, including five Special Inventor Awards, representing industry standard technologies that have benefited both commercial airlines and military customers. Jay has performed root cause analysis and developed innovative technical solutions for resolution of complex in-service airline issues. These innovative technologies have provided large cost and weight savings along with high reliable systems to the airlines. Recently, he resolved complex anomalies affecting the Twinjet Air Supply Ducts, Engine Electronic Controls, Minuteman III Missiles, Satellite Launch-Lock System, and Ground Missile Defense System. He has authored over 100 technical papers and won industry awards from many companies, including General Electric, Amoco, RMB Products and Industrial Tube Corp. Jay has a passion for mentoring young engineers in enhancing their technical skills and advancing their careers.



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Best Wishes

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