

Annual Report
Indo-US Science &
Technology Forum

April 2004 to March 2005

*“Science and art belong to the whole
world, and before them vanish the
barriers of nationality.”
– Goethe*

Annual Report



**ANNUAL REPORT OF
THE INDO-US SCIENCE & TECHNOLOGY FORUM**

2004-2005

The Indo-US S&T Forum is a bilateral body established under an agreement between the Governments of India and the United States of America with the mandate to facilitate and promote cooperation in the areas of science and technology through interaction between government, academia and industry in the two countries.



The office premises of the Indo-US Science & Technology Forum in Fulbright House, New Delhi

CONTENTS

Message from Co-Chairs	02
From ED's Desk	04
<hr/>	
History of Indo-US S&T Cooperation	06
Chronology of Forum events	07
Events during the year	08
Appointment of Executive Director & Staff Members –	
Forum Office inauguration –	
6th Governing Board Meeting –	
Forum Foundation Day –	
<hr/>	
Aims and Objectives of the Forum	14
Structure of the Forum	15
Composition of the Governing Body	16
Thrust Areas of Co-operation	18
<hr/>	
Academic Activities	19
Flagship Programs –	20
Bilateral workshops –	24
Travel support for International/Bilateral events –	32
Visiting Fellowships –	37
Joint Centres –	39
Academic partners –	40
<hr/>	
Financial Statement	41
<hr/>	
Contact Addresses	52

MESSAGE FROM THE CO-CHAIRS



Prof. V.S. Ramamurthy
Indian Co-Chair



Dr. Norman P. Neureiter
US Co-Chair

The Indo-US S&T Forum has come a considerable way since its first formal Governing Board meeting in March 2001 in New Delhi. We recall the exhilarating words of the U.S. Ambassador, Richard Celeste who said, "He hoped that the Forum can truly put the 'WOW' into the India-US relationship in science and technology". As our efforts progress, we must always keep this goal in mind – to use our limited resources for new, exciting and innovative activities that will open new vistas in Indo-US cooperation in science and technology. In order to do so, the Forum has to remain nimble and flexible, be open to embrace new ideas, and play a unique role of stimulating larger-scale collaborative efforts.

The challenge of setting up of a bilateral institution involves the harmonization of perceptions and sentiments of each partner into a set of transparent and functional procedures required to realize its mandate. The Forum undertook this harmonization over a span of three GB meetings, during which time we conducted an open selection processes for an Executive Director, established procedures for proposal solicitation, developed a joint peer review mechanism, and created a grant making program. Also important was the establishment of an office in New Delhi for discharging its executive functions and creating an independently funded support office in Washington, DC. Even during this institution building period the Forum supported over 30 major significant Indo-US events involving almost three thousand U.S. and Indian scientists from a wide variety of institutions.

Today the Forum plays a key role in strengthening the strategic relationship between the two countries. The two countries have understood the importance of science and technology and the role the Forum plays in fostering public-private partnership. The Forum is working to develop a stimulating program portfolio that can launch a new spirit of collaboration in our S&T relationship. Such an effort will promote stronger

public-private R&D partnerships, nurture contacts between young and mid-career scientists, foster substantive interaction between academia, industries and laboratories, and also introduce elements of lateral thinking to respond quickly and effectively to the changing needs of the scientific community in the two countries.

In terms of intellectual strengths, India is emerging as a global hub for knowledge based R&D activities especially in the realms of manufacturing, design, drugs & pharmaceuticals, among others. Undeniably in this new paradigm both India and the United States need to capitalize through their synergistic and symbiotic competitiveness. The Indo-US S&T Forum has a key role to play in nurturing and shaping this partnership. The benefits of our collaboration will go beyond our respective national borders, hopefully to the global community at large.

After having successfully established itself and defined its role, the Forum today is poised as a potent instrument for S&T cooperation. However, at this crucial juncture, the Forum needs to generate significant financial support in order to realize the full potential of this exciting instrument for collaboration in science & technology. We have made a strong beginning and our two governments have demonstrated their conviction, now it is time for the Forum to broaden its base of financial support and also reach out to the private sector.

FROM EXECUTIVE DIRECTOR'S DESK



Dr. Arabinda Mitra
Executive Director

The nuances, the undertones, the harmonics of the Indo-American relationships have subtly but undeniably changed and grown for the better. In the words of Prime Minister, Dr. Manmohan Singh, 'the best is yet to come'. It is one of standing tall, shoulder to shoulder, quiet and proud, as equal partners in the shaping of human destiny of both the countries through translating the powers of scientific partnership.

The establishment of the Forum in the beginning of the new millennium reaffirms the conviction and belief in the rich legacy of US-India scientific and technological cooperation built over a period of five decades. The Forum has already been through a careful start up period, incorporating many past lessons learnt into its new found organizational and programmatic structure. By charter, the Forum programs have strived to bridge and embrace the interests of government, academia, and industry alike.

It has utilized its definitive operational advantage, as an autonomous institution - the agility and flexibility, in being able to involve the private sector in its activity manifold. The preamble was laid through a December 2004 New Delhi roundtable on public private partnership in Indo-US R&D collaborations. The Forum is now developing programs with leading industry associations namely FICCI, CII and the US-India Business Council to organize technology summits on manufacturing and industry focused nanotechnology aimed at fostering techno-entrepreneurship.

At the same time, the Forum has established an excellent working relationship with government institutions and technical agencies including the large academic communities in both countries. A high point during June 2004 was a flagship Forum conference on Indo-US Space Cooperation which has proved to be a path breaking event connecting public and private sectors in charting the future road map on civilian space cooperation. The activities promoted by the Forum have also facilitated other inter-governmental initiatives such as the High Technology Cooperation Group (HTCG) and the International Partnership in Hydrogen Economy (IPHE).

Earlier in January 2005, the Indo-US Frontiers of Science symposium was convened by the Forum in partnership with the US National Academy of Sciences. This event brought together nearly 60 bright young scientists from both countries with the objective to discuss cutting edge research topics across the disciplinary boundaries of science, thus helping to forge a new relationship between the next generation of scientists in US and India. The Forum is now planning to hold the maiden bilateral Frontiers of Engineering symposium in early 2006.

Recognizing that the key to stimulating longer-term collaboration were the individual connections between peers and also the need for dissemination of information on the S&T strengths and competence in specific subjects, the Forum designed its initial program around small bilateral workshops and travel grants. These initiatives have resulted into generation of mutually beneficial R&D projects in more than a dozen topical areas of application and thematic sciences. The Forum has since expanded its academic activities which are largely catalytic in nature by promoting:

- **Larger symposia** – to act as a convener for an area of strategic importance (e.g. symposium on space collaboration and chemical engineering)
- **Bilateral workshops** – in diverse areas aimed towards knowledge and information sharing, leading to project generation
- **Supporting younger scientists** – through the national Academies model of bilateral Frontiers of Science and Frontiers of Engineering events
- **Visiting professorships** – to broaden the exchange of research results within targeted communities from biotechnology to microbiology
- **Reaching out to industry** – by partnering with leading industry groups to generate high quality events on technology opportunities for business development
- **Supporting joint bilateral centres** – to promote nascent collaborations through networking amongst laboratories, industry and academic institutions
- **Travel grants** – towards exploratory missions aimed at generating large scale programs, for availing a conferred fellowship and for specialist speakers in international conferences held in India
- **Training programs** – that have elements of reciprocity in accruing benefit to both the trainee and the trainer

During the period of this reporting, the Forum has supported considerable number of activities, covering a wide range of subject interests, thus enabling the participation and interaction amidst more than 1300 scientists and technologists from US and India. The Forum has now started soliciting proposals on a quarterly cycle and award activities for each call on the basis of systematic reviews simultaneously conducted in India and USA.

I have great pleasure, as the first Executive Director of the binational Forum, to present the glimpses of these activities in this annual report. As a young and dynamic organization, the Forum greatly values your interactions, both through ideas and resources, in order to usher a new era in Indo - American scientific and technological cooperation. We have made a modest beginning – with the belief that modest beginnings can have significance far beyond the apparent.

HISTORY OF INDO-US S&T COOPERATION



- | | |
|---------------|---|
| 1950's | Green revolution facilitated with the PL 480 Funds
Establishment of Land Grant Colleges |
| <hr/> | |
| 1960's | Establishment of IIT, Kanpur
Establishment of NCERT, N Delhi
Nuclear Cooperation Agreement
Tarapur Power Plant |
| <hr/> | |
| 1970's | NASA-ISRO – SITE (Satellite Instructional Television Experiment) |
| <hr/> | |
| 1980's | Indo-US S & T Sub commission
STI (Science & Technology Initiative)
USIF (US-India Fund) |
| <hr/> | |
| 1990's | Indo-US Fellowships Program
DST-NSF S&T Collaboration Program
NASA/NOAA-ISRO/DST MoU
DBT/ICMR-NIH/CDC Health & Medical Sciences Program |
| <hr/> | |
| 2000 | Indo-US Science & Technology Forum
Indo-US Biotechnology Alliance
High Technology Coop Group (Nano, Bio, Info & Defence)
Indo-US Cyber Security Forum
US-India Agriculture Alliance
US-India HIV-AIDS Partnership
US-India Working Group on Civilian Space Cooperation |

CHRONOLOGY OF FORUM EVENTS

- May 1997** First official level meeting of Indo-US scientific agencies on post USIF modalities for bilateral S&T Cooperation at New Delhi
-
- Dec 1997** Joint Statement of intent to establish the Indo-US S&T Forum signed at New Delhi.
-
- Mar 2000** Conclusion of an inter-governmental agreement to establish the Indo-US S&T Forum signed at New Delhi
-
- Mar 2000** First Indo-US Roundtable Dialogue on S&T Cooperation at Hyderabad
-
- June 2000** Forum registered at Delhi as a not-for-profit scientific society
-
- July 2000** Launch of Forum in New Delhi in conjunction with the first interim GB meeting
-
- Sept 2000** Second Indo-US Roundtable Dialogue on S&T Cooperation at Washington D.C.
-
- Mar 2001** First meeting of the regular Governing Board at New Delhi
-
- Nov 2001** Forum enters into agreement with USEFI to rent office space at Fulbright House, Hailey Road, New Delhi
-
- Mar 2002** Meeting of the GB at New Delhi
Round Table meeting of Indian scientists on S&T Cooperation
-
- Aug 2003** Town Hall meeting on Indo-US S&T relationship
Meeting of the GB at Washington DC
-
- Nov 2004** Full time Executive Director joins
-
- Dec 2004** Forum office inaugurated at Fulbright House, New Delhi
Meeting of the GB at New Delhi
-
- Mar 2005** Formal celebration of Fifth Foundation day

EVENTS DURING THE YEAR

Appointment of the Executive Director and staff members

Arabinda Mitra was confirmed in November 2004 as the first Executive Director of the Forum through an open selection process. Dr. Mitra who has a rich mix of scientific and administrative experience, by training is an Earth Science Systems scientist, with a PhD from the University of Cambridge, UK.

His scientific foray spans from working in the Himalayan ranges while serving in the Department of Atomic Energy; to the bottom of the oceans – as a graduate student working on the mid oceanic ridge systems in the Universities of Delhi and Cambridge; and then onto the remotest southern continent of Antarctica – as a project scientist in the National Centre for Antarctic and Ocean Research, Goa. His administrative experience entails a wide exposure to international S&T cooperation while handling the Indian Antarctic program in the Department of Ocean Development and later the U.S. desk in the International Division of the Indian Department of Science and Technology.

Ramanathan Varadarajan who has been associated with the Forum in an officiating capacity since its inception in 2000, was confirmed as the Manager, Finance & Administration of the Forum. Mr. Varadarajan is a Post Graduate in Commerce from Delhi University with specialization in Business Administration and has nearly 24 years of work experience with multinational firms and central R&D laboratories. He has a varied exposure to administrative and fiscal facilitation of international scientific projects while working with the Defence Research and Development Organisation and the International Advanced Research Center (ARCI) for Powder Metallurgy and New Materials in India.

Ratna Cranenburgh who is a graduate from Calcutta University with professional secretarial qualification joined the Forum as the Executive Secretary. She has 12 years experience working in senior secretarial capacity in reputed companies like India Today Group, Remington Rand etc.

US Desk

Michael Cheetham is the Executive Director of the India Science & Technology Partnership (INSTP) and represents the US desk of the Forum in Washington D.C. Mr. Cheetham has worked for 15 years in the field of international energy policy, energy efficiency and sustainable development with a focus on collaboration with developing countries. In 1997 he joined the National Research Council as a Program Director in international energy and environment working mainly with China and India. From 2000 to 2004 Mr. Cheetham coordinated US participation in the Forum from the National Academies. Now based at the Smithsonian Institution he focuses exclusively on India working through the Forum and INSTP.

Sixth Governing Body Meeting

The sixth meeting of the Governing Body was held on 3 Dec 2004 in New Delhi, in conjunction with the Forum office inaugural function. The meeting which was co-chaired by Prof. V.S. Ramamurthy and Dr. Norman Neureiter began with a welcome note for the new GB members appointed for a three year term beginning from 2004.



The co-chairs recapitulated the significant strides which the Forum have been able to make over the last year in having able to initiate and convene two major Forum signature events apart from its other S&T programs, appoint a full time Executive Director through an open selection process and establish the new Forum office. The public-private partnership roundtable which was held on the previous day was reckoned by the GB as yet another important event that had showcased the expectations of the private sector R&D community in envisioning new Forum programmatic activities.

The GB also resolved several important operational issues pertaining to the Forum staff requirements, the outreach mechanisms of the Forum and its representation in the U.S., the quarterly call for proposal and award making cycles, the review process to be adopted and the award granting formalities. While reviewing the programmatic activities of the Forum, the GB was particularly conscious of the fact that a program evaluation methodology should be adopted by the Forum to assess the impact of its scientific activities.

While considering the programmatic initiatives, the GB felt that the intrinsic strength of the Forum lies in its pragmatic approach by functioning in the most flexible, open and assimilative manner, through adoption of ideas and action plans, which are mooted by the scientific communities at large in both the countries. Accordingly, the GB decided that the Forum should strive to respond to the needs of the scientific enterprises through a variety of mechanisms, broadly categorized under the following three heads for which a budget allocation of Rs 9.00 crores (approximately US \$ 2.0 m) was envisioned:

- Education, Training and Exchanges
- Grant Making
- Flagship Initiatives

Concern was also raised in the GB about the fall in Forum income during the next fiscal year with the decline in interest earnings on the U.S. endowment and the proportionate decrease in matching grant from GOI. Certain strategies were decided to be adopted, like:



- efforts to be pursued to enhance the U.S. rupee endowment to the Forum
- the accumulated savings should be judiciously invested to earn the best possible interest return
- initiatives to be mounted independently in US and India to garner funds from private and philanthropic sources.



Forum Office Inauguration

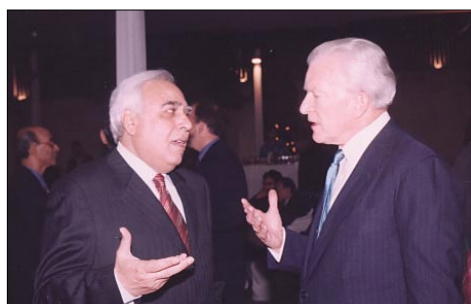
The formal inauguration of the Forum office on 3 December 2004 at the Fulbright House in Hailey Road was flagged as a watershed event in the shared history of Indo-US relationship. The Fulbright House is in itself a landmark building in Lutyen's Delhi, which houses the United States Education Foundation in India (USEFI) along with the Ford Foundation. In his inaugural speech, Mr. Kapil Sibal, Indian Minister for Science, Technology and Ocean Development aptly remarked 'the Forum being located in this historic building, which is a living symbol of our cherished relationship, will provide strong collegial inspiration that will only add to the synergy of science, technology, art and culture to the lives of young Indians and Americans alike'. He also expressed his confidence that the young organization will fulfill the aspirations of the scientific communities and enterprises of both the great democracies by providing an all weather bridge to promote S&T entrepreneurship, fraternity, mutual trust and leadership.

US Ambassador, Dr. David C. Mulford in his address expressed that the creation of an institutional framework represented through the Forum encourages and promotes the genius of our nation's scientists. He remarked 'tonight we celebrate just such an endeavor. After years, of mutual effort, we gather here because our two governments have agreed to support the Indo-US Science and Technology Forum. This is the center of creative energy where the vision and ideas of individuals can flourish. It is deeply satisfying to see the Forum offices open for business.'



The opening function was also graced by the Forum governing board members from U.S. and India including co-chairs, Prof. Ramamurthy and Dr. Neureiter. The Executive Director, Dr. Arabinda Mitra was also introduced by the Co Chairs.

The Forum had entered into an agreement with USEFI to lease hire an office area of 2200 square feet in the Fulbright House. While refurbishing the space, design efforts were required to maintain the grandeur and essence of the historic building and transforming



it in the contemporary context by

giving the interiors a new and modern workable ambience. The architects have been able to provide an open, benign and a scientific floor plan to accommodate the present, as well as future requirements. The layout includes the entrance porch, foyer, reception area with the Forum logo, a cozy meeting room, thirteen work stations, with an exclusive travel desk required for managing the mobility of scientists. Besides,

private chambers for the E.D., Co Chairs and other executives have been also catered, spread over into two floors of left wing of the Fulbright House.

Fifth Forum Foundation Day Celebrations

The fifth anniversary of the Forum Foundation Day was celebrated by a well attended evening function in the lawns of the Fulbright House on 21 March 2004 which was attended by a gathering of more than 150 invitees including scientists, technocrats, academicians, civil servants, diplomats and representatives both from the print and T.V. media.

The gathering was engrossed to audience an outstanding speaker in Mr. Jairam Ramesh, a Member of the Upper House of the Indian parliament, who delivered the Foundation Day lecture. Mr. Ramesh, who is a mechanical engineer from IIT, Bombay and then studied at the Carnegie Mellon University and the Massachusetts Institute of Technology, is a prolific writer on Indian economics and public policy and has been an important member of the think tank in the Indian central government.

Jairam Ramesh eloquently espoused the elements of lateral thinking by sharing his views in shaping the future of Indo-US science and technology relationship through the platform of the Forum. He emphasized on the need to renewed focus on science and technology on subjects of larger public good, evolve a mechanism through the



Forum towards institutional rejuvenation by establishing Indo-US Centres of excellence and leverage resources to focus on selective core areas like weather & climate research, food & agriculture, health & environment including biotechnology R&D. He also emphasized the need to integrate the ethos of research with education.

The Minister for Science, Technology and Ocean Development of the Government of India, Mr. Kapil Sibal in his address acknowledged that the Forum was the most potent and powerful platform to catapult Indo-US relationship, through which new dimensions of collaboration could be engaged in the 21st century. Recapitulating the past success story of the Forum and the limitless possibilities it offers, Minister Sibal felt that in order to



sustain the pace of future activities, it was crucial that the present USG corpus funding should be enhanced. In the spirit of the founding agreement, the GOI could then match enhanced grants to the Forum. He however felt, that the ultimate promise of a truly successful Forum will lie in its evolution into a jointly endowed bi-national foundation.

Special Guest, Mr. Robert Blake, Deputy Chief of Mission, U.S. Embassy, acknowledged that the Indo-US relationship at the present moment was running at an all time high. With the demonstrative ability already showcased by the Forum, Mr. Blake reaffirmed, that IUSSTF is now considered as a standard bearer for Indo-US science & technology collaborations. The Forum can work, shoulder to shoulder, with the best US & India can offer to build strength, create wealth and generate opportunities and conditions that will ensure security and prosperity for both the nations.

Prof. V.S. Ramamurthy, the Indian Co-Chair of the Forum informed that since inception, as its guiding philosophy, all the programmatic activities of the Forum have flown out from the common S & T perspectives shared by U.S. and India and have largely been conceived, guided and moulded by the scientific communities from the two nations.

Dr. Norman Neureiter, the US Co-Chair of the Forum in a read out message congratulated all those who have been involved in building the Forum to its present level. He wished that the Forum should remain nimble and flexible, to seek out the new and the innovative, and to always strive to bring an element of stimulating richness to the many stranded fabric that constitutes the "new" relationship between the US and India.

Thanking all those who have been partners in the shaping of the Forum in its nascent years, Arabinda Mitra acknowledged their valued interaction with the Forum and sought their continued support and participation in all its future endeavours. The function concluded with the presentation of mementoes depicting the symbols of the two greatest democracies of the world, the Indian Parliament and the

U.S. Capitol with the bi-national Forum logo at the background. The Forum ED exhorted that 'we all aspire that the power of science, translated through this Forum, can make it a shining symbol of future Indo-US relationship'.

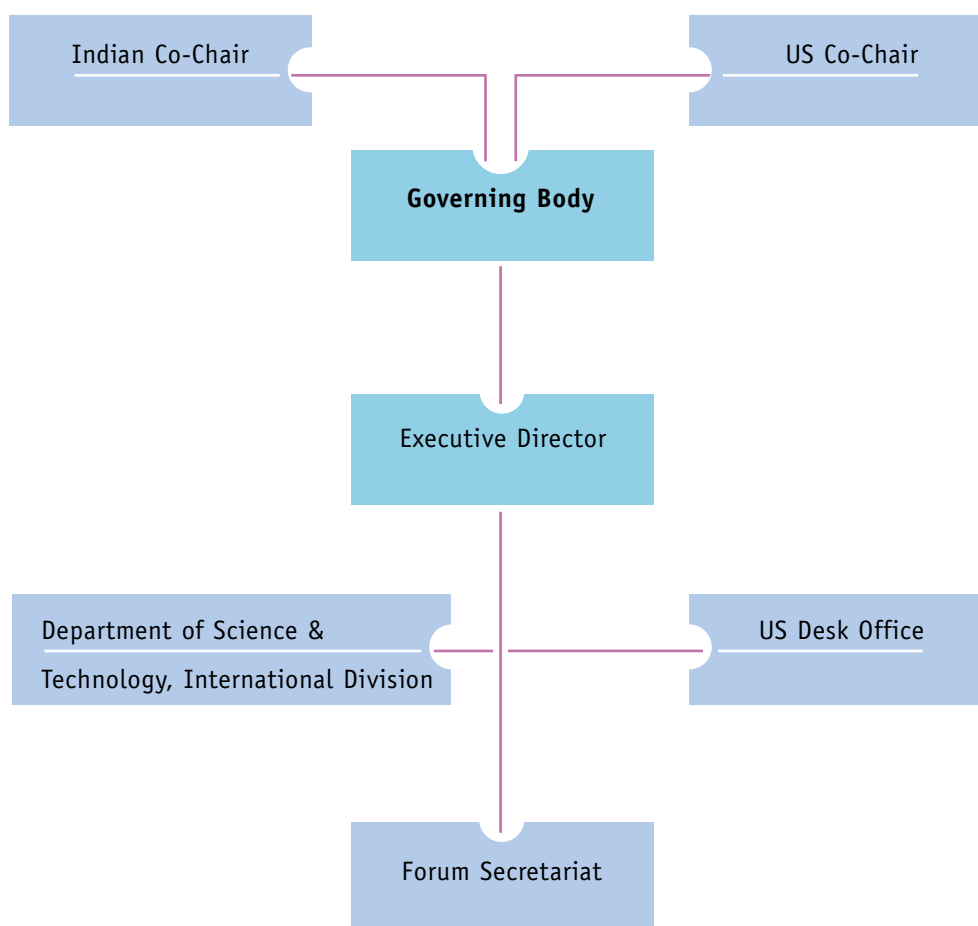


OBJECTIVES & AIMS OF THE FORUM

CATALYST to facilitate, seed and promote US-India bilateral collaboration in science, technology, engineering & biomedical research through substantive interaction amongst academia, R&D laboratories, industry and government.

- Awareness through exchange and dissemination of information and opportunities in promoting bilateral scientific and technological cooperation.
- Capitalizing on the scientific and technological synergy on issues of common concern leading to long term partnership based on shared values.
- Support exciting and enabling science and technology program portfolio that paves way to sustainable interactions and potential collaborations.
- Nurture contacts between young and mid career scientists to develop mutual trust, leadership and entrepreneurship in research and development.
- Encourage public – private partnership and techno-preneurship to foster elements of innovation and enterprise through knowledge networking between academia and industry.

STRUCTURE OF THE FORUM



Administrative Mechanism: Bilateral Autonomous, Not-for-profit, Scientific Society registered under Indian Laws.

Funding Source: Annual interest from Endowment Fund, as the US contribution, with matching grant from the Department of Science & Technology, Government of India.

COMPOSITION OF THE GOVERNING BODY (2004-2005)

Indian Side**Prof. V. S. Ramamurthy, Co-Chair**

Secretary to the Government of India
Department of Science and Technology

Dr. Raghunath A. Mashelkar

Director General
Council of Scientific and Industrial Research &
Secretary, Department of Scientific and Industrial Research

Dr. Maharaj K. Bhan

Secretary to the Government of India
Department of Biotechnology

Prof. Sanjay G. Dhande

Director
Indian Institute of Technology, Kanpur

Mr. Nandan M. Nilekani

C.E.O, President and M.D.
Infosys Technologies Ltd

Mr. Kiran Karnik

President
National Association of Software and Service Companies

Mr. Knight P. Pandian

Joint Secretary & Financial Adviser
Department of Science and Technology

COMPOSITION OF THE GOVERNING BODY (2004-2005)

U.S. Side**Dr. Norman P. Neureiter, Co-Chair**

Director
Center for Science, Technology and Security Policy
American Association for the Advancement of Science

Prof. Bruce Alberts

President,
National Academy of Sciences
The National Academies

Dr. Robert K. Dixon

Advisor
Council on Environmental Quality
Executive Office of the US President

Dr. David L. Evans

Under Secretary for Science
Smithsonian Institution

Dr. Joseph Jen

Under Secretary for Research, Education, and Economics
U.S. Department of Agriculture

Dr. Kerri Ann Jones

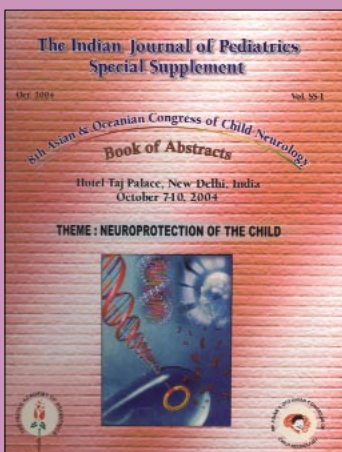
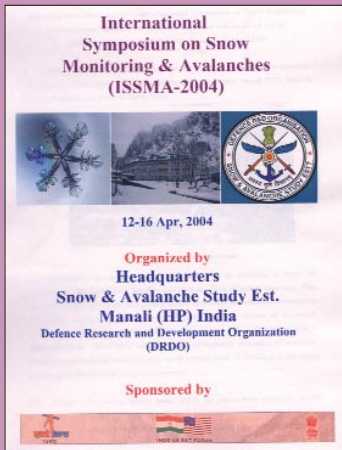
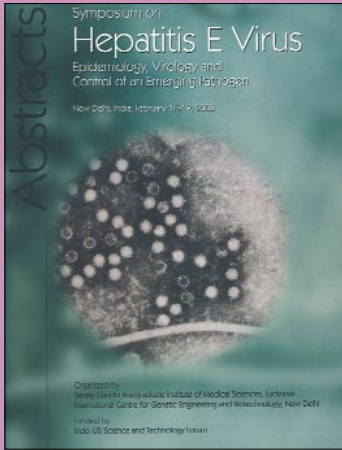
Senior Advisor
National Science Foundation

Dr. Rodney Nichols

Former President and CEO
New York Academy of Sciences

INDICATIVE THRUST AREAS FOR MUTUAL COOPERATION

- Distributed Energy Systems including Hydrogen Fuel
- Renewable Energy Sources (Biofuels and Bioenergy)
- Nano Science & Technology covering nanocomputing, quantum computing, biocomputing, molecular computing, nanofabrication and advanced materials
- Climate Modeling and Global Change with emphasis on improvement of analysis and forecasting of ocean-atmosphere systems and natural disasters
- Brain Research covering developmental neurobiology & computational neuroscience
- Biomedical Sciences including diagnostic medical tools, telemedicine, health and disease control
- Biotechnology including human & plant genomics, bioinformatics, proteomics and agricultural biotechnology, drugs and pharmaceuticals
- Information Technology and cyber security including universal digital library and distance learning, communication and neural connectivity
- S&T for security and safety
- High energy physics and Astro-physics including Space science studies



Academic Activities

2004 – 2005

FLAGSHIP PROGRAMME: INDIA-US CONFERENCE ON SPACE SCIENCE, APPLICATIONS AND COMMERCE



FLAGSHIP PROGRAMME: INDIA-US CONFERENCE ON SPACE SCIENCE, APPLICATIONS AND COMMERCE

Date and Venue: 21-25 June 2004, Bangalore, India

Principal Organisers :

Mukund Rao, ISRO, representing Astronautical Society of India, Bangalore

Email : mukundr@blr.vsnl.net.in

Mireille Gerad, American Institute of Aeronautics and Astronautics, Washington DC

Email : mireilleg@starpower.net



As a follow up to the summit declaration on Indo-US high technology cooperation, the Forum in association with Indian Space Research Organisation (ISRO), National Aeronautics and Space Administration (NASA) and National Oceanographic and Atmospheric Administration (NOAA) organised this flagship event to strengthen and expand the cooperation between India and US in field of civilian space science and applications including the promotion of related commercial activities.

The conference was attended by about 550 delegates, including about 140 from USA and was inaugurated by the Indian Minister of State in the Prime Minister's office and the US Ambassador in India. U.S. President sent a message to all participants at the beginning of the event and the conference ended by an address given by the President of India through video conferencing.

A major highlight of the event was the adoption of the vision statement towards strengthening and expanding cooperation in space science and commerce between the Indian and US governments, business enterprises and research institutions. Areas with strong potentials for enhanced cooperation as discussed in the conference included:

- Earth Observation Science Technology and related applications- including natural resources management, meteorology, water cycle, atmospheric sciences, infrastructure etc.
- Satellite Navigation and Applications
- Earth and Space Science – including Astronomy, Planetary Science and Solar Terrestrial Science etc.
- Natural Hazards Research and Disaster Management
- Support Education and Training in Space

In the commercial sector, it was brought out that the aerospace enterprises from India and the U.S. can profitably explore promising opportunities for business development in the areas of earth observations, satellite communications and satellite navigation to cater to a world market.

FLAGSHIP PROGRAMME: INDO-US FRONTIERS OF SCIENCES SYMPOSIUM FOR YOUNG SCIENTISTS

Date and Venue: 9-11 January 2005, Bangalore, India

Principal Organisers:

Uday Maitra, Indian Institute of Science, Bangalore, India

Email : maitra@orgchem.iisc.ernet.in

Gail P. Jarvick, University of Washington, Seattle, USA

Email : pair@u.washington.edu

Since 1989, the Frontiers of Science Symposia (FOS) series of U.S. National Academy of Sciences (NAS) has been instrumental in bringing together the best young researchers – the next generation of leaders – in the natural sciences and engineering in the United States, and increasingly in other countries. In addition to bridging the scientific disciplines, these symposia also serves to promote interactions and collaborations between young scientists with their colleagues in other countries. Such meetings, which inherently involve the random collision of different ideas across widely different fields, are the best way to generate new cutting-edge science around the world.

As its flagship program, the Forum facilitated and funded the maiden Indo-US Frontiers of Science Symposium in partnership with the US National Academy of Science. The event which was held at the Indian Institute of Science, Bangalore, brought together about 55 outstanding young researchers below the age of 45 from India and US, not only to discuss exciting advances and opportunities in their own fields, but also to learn and discuss about research at the cutting edge of other disciplines, while building new ties between future leaders of both nations scientific enterprise.

At the FOS symposium talks were presented on contemporary research topics with a view to both conveying and deriving cross-disciplinary information and insights through a format, which allowed informed one-to-one discussions amongst the participants. The topics covered were disparate and included:

- Ignoring the world around you
- Biotechnology applications to improving food
- Body weight regulation
- Dynamics of complex systems
- Galaxy formation
- Nanostructured materials
- Ordered protein aggregation
- Single molecule biophysics

The FOS was acclaimed by the participants as a very useful and unique event for developing robust interaction between the next generation of scientists with the recommendation to continue it on an annual basis, alternating between India and U.S.

More information on Indo-US FOS series is posted on www.national-academies.org/nas/fos

FLAGSHIP PROGRAMME: INDO-US FRONTIERS OF SCIENCES SYMPOSIUM FOR YOUNG SCIENTISTS



INDO-US WORKSHOP ON NANOSCALE MATERIALS: FROM SCIENCE TO TECHNOLOGY

Date & Venue: 5-8 April, 2004, Puri, India

Principal Investigators:

S.N. Sahu, Institute of Physics, Bhubaneswar, India.

E-mail: sahu@iopb.res.in

Puru Jena, Virginia Commonwealth University, Richmond, U.S.A.

E-mail: pjena@vcu.edu



Nanoscale materials exhibit new opportunities for technological applications in magnetic, optical, electronic, catalytic and medical devices. The objectives of this workshop was to identify outstanding problems and issues in the area of nanomaterials and emerging technologies, to promote collaborative research between Indian and American scientists, and to facilitate exchange of students and postdoctoral fellows.

The technical sessions were attended by 35 Indian and 14 US participants covering topics such as synthesis & spectroscopy; characterization of nanomaterials with special emphasis on clusters, bio-nanomaterials, quantum dots, nanotubes and wires. Theoretical methods were outlined to understand these nanoscale systems. Separate sessions were also held on synthesis, properties and applications of nano materials. About 40 posters were displayed by scientists and research students from academic institutions and laboratories. There were participants also from Australia, France, Japan, Finland, Germany and the Netherlands.

Carbon nanotubes have potential use in hydrogen storage devices and their synthesis using catalysts was discussed including challenges in hydrogen storage materials. Noble metal nanoclusters used in the fabrication of photonic devices were touched upon including nanoparticles embedded in a matrix which restrain the size, shape and properties of the particles. Presentations were made on silica materials that have a range of applications in microelectronic devices, optical fibers, catalysts, and composite plastics. Silica nanoclusters as building blocks for novel materials were also described. At the confluence of inter disciplinary efforts, including material science, nano systems and devices are designed to perform a wide variety of functions. Selected observations of recent studies were presented by various speakers.

This workshop facilitated the exchange of ideas in the above areas of R&D and provided a platform to develop several collaborative projects between disparate groups.

INDO-US CLIMATE CHANGE MEETING

Date & Venue: 26-28 July, 2004, Gurgaon, India

Principal Investigators:

G. Srinivasan, Department of Science & Technology, New Delhi, India.

E-mail: srinidst@nic.in

Toral Patel, NOAA, Washington DC, U.S.A.

E-mail: patel-weynandto@state.gov



This two day meeting was organized with a familiar group of US and Indian scientists who have had earlier interactions in order to facilitate coordination of research and improve understanding of global climate science. The meeting was aimed to identify and concretize joint projects that could be implemented under the existing mechanisms of collaboration with specific time line of activities towards data collection, collation, analysis and publication.

The discussions centered around four focused areas that are indicators and tools for climate change studies, including:

- aerosol radiative forcing
- seasonal forecasting
- ocean observation and tidal gauge data &
- measurement & monitoring of atmospheric gases including infrastructure development

About 15 joint projects were identified and prioritized on topical areas of common interest like cloud-aerosol interaction, comparative radiative forcing, predictability studies through modeling, seasonal forecasts and monsoon forecasting; communication and networking of climate information flows, tide gauge operations, preparation of storm surge forecasting and green house gas monitoring studies and carbon cycle monitoring. It was decided that the PI's would formulate the joint proposals along with the data generation and sharing protocols for approaching the national federal agencies at both sides towards implementation. For projects that would require travel grants only, were to be submitted to the Forum for consideration.

As a follow up of this meeting two joint activities in the tidal gauge data analysis and coupled forecast system for monsoon studies have already been initiated.

Sixteen U.S. scientists drawn from NOAA, NASA, universities including the chief climate negotiator from U.S. and about 30 Indian scientists drawn from various institutions like IITM, IMD, IIT, PRL, NIO, SOI, NPL, NCMRWF, VSSC and federal agencies participated in the meeting.

WORKSHOP ON ENERGY TECHNOLOGY RESEARCH AND DEVELOPMENT IN INDIA AND UNITED STATES: OPPORTUNITIES FOR COLLABORATION

Date and Venue: 19-24 August, 2004, New Delhi, India

Principal Investigators:

R.K. Pachauri, The Energy Research Institute, New Delhi, India

Email: pachauri@teri.res.in

John Holdren, Harvard University, USA

Email: john_holdren@harvard.edu



The U.S.-India Energy R&D Workshop was sponsored by the Forum and was held under the auspices of the U.S.-India National Academies joint study on energy and environmental cooperation between the two countries.

The workshop, which brought together a number of senior Indian and U.S. experts, aimed to identify opportunities to strengthen energy-innovation activities in India and the United States, keeping in view the energy outlook and

energy technology possibilities in these countries as well as globally, and looking particularly at avenues of cooperation between Indian and U.S. institutions to assist in such activities.

The workshop focused on topical areas like

- Power Generation
- Energy Efficiency
- Hydrocarbon Fuels
- Vehicles, Biomass, (non-Biomass)
- Renewable Energy
- Hydrogen Technologies

During the discussions, experts from India and the U.S. presented overviews of the status and technical activities in each of these areas and also deliberated upon common topics of interest for future collaborative efforts. Over the course of the workshop a number of topics emerged as being of mutual interest and having particular potential in working together. Although this list was remarkable for the breadth of topics covered, as was the interest shown by the participants in collaborating in these areas, there was also some consensus that the list need be refined to specific projects where the issues are of particular importance to both countries, and international cooperation could facilitate or enhance significant progress. The need for setting up nodal centres in both countries that could help facilitate and channel future interactions was also recommended.

The workshop had 12 US and about 45 Indian participants with a wide representation from industry, public sector enterprises, laboratories, academia and officials from federal agencies from both countries.

INDO - US ROUNDTABLE ON PUBLIC PRIVATE PARTNERSHIP IN R&D AND TECHNOLOGY ENDEAVOURS: THE ROAD AHEAD

Date and Venue: 2 December, 2004, New Delhi, India

Principal Organisers:

Vijai K. Topa, Federation of Indian Chamber of Commerce and Industries, N. Delhi

Email: vtopa@ficci.com

Arabinda Mitra, Indo – US S&T Forum, New Delhi

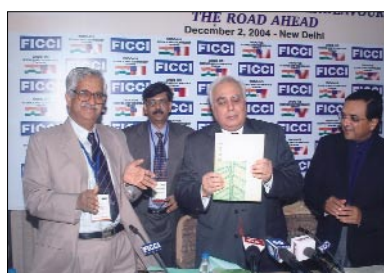
Email: amitra@indousstf.org



The Roundtable organized by the Forum in partnership with FICCI was aimed to generate awareness of scientific capability between private and public sector institutions and to evolve measures to appreciate skills of both countries and to foster co-operation through public-private partnership of enterprises both in US & India. There were three technical sessions focused on knowledge-based industries; application of R&D in the manufacturing sector; R&D applications in life sciences.



The many opportunities for joint public-private collaboration in biotechnology, nanotechnology and IT fields with heavy outsourcing in the bio-chemical fields of enzyme technology and engineering, and biocatalysts with competent U.S. counterparts were flagged. A need was felt for technology incubation centers in institutions and universities. Another suggestion was to create a center for clinical trials and concentrate on affordable drugs with the formation of a genomics network.



Speakers from GE, Boeing and ARCI (laboratory) spoke about identifying strategic alliances and the need for the Forum to help facilitate pre-competitive technology collaborations. The areas pointed out for collaboration included space, water related technologies, desalination, health and agriculture related technologies with the proof of concept provided by fund support from the Forum.

The life science session focused on the value chain from drug discovery to manufacturing and to minimize risk and cost. It was pointed out that although India is a preferred destination, proactive policies are needed and data exclusivity protection be considered. Outsourcing of clinical trials from the U.S. to Indian pharma majors are already underway. Possible areas of collaboration highlighted were agriculture and food products, particularly in food retailing for engaging the market with the best of R&D.

The Roundtable was an exhilarating exchange of competent speakers and set the pace for an increased dialogue through public-private partnership to further Indo-U.S. bilateral collaboration. More than 40 technical and R&D representatives from various segments of industries that have interest in US and about 15 scientists from laboratories participated in the deliberations which was inaugurated by Mr. Kapil Sibal, Indian Minister for Science & Technology and had all the Governing Board Members of the Forum in attendance.

US- INDIA CONFERENCE ON CHEMICAL ENGINEERING IN A GLOBAL ENVIRONMENT

Date and Venue: 28-30 December, 2004, Mumbai, India

Principal Investigators:

G. D. Yadav, Bombay University, India

Email: gdyadav@udct.org

Doriaswamy Ramakrishna, Purdue University, USA

Email: ramkrish@ecn.purdue.edu



The Indo-US workshop was held in conjunction with the first joint meeting of the American and Indian Institutes of Chemical Engineers and was covered through 4 main technical sessions.

The session on science and technology policy and intellectual property issues focused on the challenges presented by globalization of technology, namely, the need to promote cooperation in scientific research while recognizing the essentially competitive nature of technological development and the operation of the market. The speakers spoke about the need for development of technopreneurship in academia and policy adaptation to foster such environment.

The session on corporate activity in a global environment had US speakers from MIT, Vical, DuPont, and Indian speakers from GE, AVRA labs etc highlighting the increased global activity in chemical & pharma sectors. The session highlighted the synergies in the joint activities between the developed and developing world, and generated a great sense of optimism for the chemical and pharmaceutical industry.

The session on future challenges in chemical engineering education and research showcased views on how the traditional core of chemical engineering could be preserved while simultaneously meeting the challenges of the future emanating from areas such as biotechnology, nanotechnology and information technology. The need for innovative solutions in teaching mechanism through adopting an interdisciplinary approach was mooted by the speakers predominantly from academia.

A fourth session on identifying research areas for future Indo-US collaborations covering the above core areas was also held with a specific set of recommendations emerging out from the session that would be taken up for firming joint project based activities.

The 3 day meeting was attended by about 75 US participants including 15 from academia supported by the Forum. More than 500 Indian participants largely from industry and a sizeable number of students took part in this event. The plenary lecture was delivered by Dr. R. Chidambaram, Principal Scientific Advisor to the Government of India.

INDO-US WORKSHOP ON INNOVATION AND RADICAL INNOVATION

Date and Venue: 28-31 December, 2004, Trivandrum, India

Principal Investigators:

G. Sunderarajan, International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, India

Email: gsundar@arci.res.in

J. A. Sekhar, University of Cincinnati, USA

Email: jainagesh.sekhar@uc.edu



In the present era of knowledge driven societies characterized by short product and process life cycles, innovation and radical innovation have been receiving growing attention in recent years. In view of the current relevance of the theme and its considerable importance in the present era of globalization, this event was held with participation of nearly 60 engineers, scientists, and industrialists including US speakers.

The event provided an ideal forum for bringing together engineers, scientists, and industrialists with those who study inventions and innovations as well as experts dealing with patents and government regulations. The Workshop addressed several facets of innovation. Issues addressed ranged from planning for inventions, supporting innovations in small and large firms, managing innovations and dealing with IPR and regulatory matters.

A total of 28 lectures, 17 from the US side and 13 from the Indian side, were delivered by leading experts on the above issues. The presentations were mainly classified under the categories Innovation, Radical Innovation, Incubation of Innovative Technologies and Patents. In addition, there were sessions on Innovations in Practice comprising numerous interesting case studies with an emphasis on technological innovation related to materials, which are the underpinnings of a strong technological society, and downstream products. The workshop also facilitated in-depth discussions between the participants which felt that an innovation policy is necessary to establish a framework where the government, private sector and research organizations can all play their part in fostering technological growth in India.

On the occasion of the event, Indian, Co-chair of the Forum, Prof V. S. Ramamurthy released a book on **Indo-US Collaborations in Natural Sciences** published by U.S. Office of Naval Research. All delegates visited the Tata Consultancy Services at Technopark, Trivandrum, a company which has played a major role in IT innovation in India.

SYMPOSIUM ON HEPATITIS E VIRUS: EPIDEMIOLOGY, VIROLOGY AND CONTROL OF AN EMERGING PATHOGEN

Date and Venue: 18-19 February, 2005, New Delhi, India

Principal Investigators:

Rakesh Aggarwal, Sanjay Gandhi PG Institute of Medical Sciences, Lucknow, India

Email: rakesh@sgpgi.ac.in

K Krawczynski, Center for Disease Control and Prevention, Atlanta, GA, USA

Email: kzk1@cdc.gov



Hepatitis E, first discovered in India, is responsible for significant disease burden in several developing countries, in particular the Indian subcontinent. In recent years, several new basic and applied developments have occurred in relation to this disease and its causative agent, known as the hepatitis E virus (HEV). These include advances in knowledge about basic viral biology viz. those in viral structure, viral replication, infectious clones, and virus-host interactions, as well as in

potential clinical applications, viz. diagnostic tests, protective epitopes, epidemiology and recombinant vaccines. Much of this progress has been made in Indian and US laboratories.

With the participation of several reputed scientists from both these countries with a few scientists from other parts of the world, the symposium provided an excellent forum to review and share recent advances in the field of hepatitis E, and to discuss avenues for future research in this emerging disease. The scope of the workshop ranged from basic virology of the virus to clinical and epidemiological aspects of HEV infection and development of vaccines against this disease.

The discussions on epidemiological aspects of infection in disease endemic and non endemic regions with respect to special groups like children, pregnant women and pre existing liver infected patients were highlighted. Session on HEV virology and biology touched upon viral structure, HEV genome and genomic variations, diagnostic test strategy, viral replications etc. The session provided insights into future directions for improving serological tests for diagnosis of HEV infection. The possible role of animal HEV transmission and current status of various approaches towards developing preventive vaccines were reviewed. The final session was devoted to unanswered questions about hepatitis E.

Highlight of the workshop was the presence of nearly 60 students who were audience to 9 US, 9 Indian and 4 other international invited speakers. In addition, about 25 Indian doctors and clinicians attended the event which is expected to have provided directions for future research through a collaborative effort.

PREVENTING DIABETIC FOOT AMPUTATION IN DEVELOPING COUNTRIES

Date and Venue: 22-23 April, 2005, Chennai, India

Principal Investigators:

Vijai Vishwanathan, Diabetes Research Centre, Chennai, India

Email: dr_vijay@vsnl.com

David Campbell, Beth Israel Deaconess Medical Centre, Harvard Medical School, USA

Email: dcampbel@caregroup.harvard.edu



India is a country with nearly 30 million, the largest number of diabetic patients in the world. Of all the diabetic complications, diabetic foot is the most neglected and most expensive, thus posing a huge socio economic burden on society. At present there is poor knowledge about the preventive aspects of this problem both among doctors and patients, which is responsible for the high prevalence of foot infections and amputations among diabetic patients in India.

In the United States, it is estimated that diabetes afflicts sixteen million people. Among them fifteen percent or two million patients are likely to develop foot complications. The annual direct and indirect costs for foot infection treatment alone exceed US \$10 billion.

As a part of the amputation preventive initiative this tutorial workshop had an expert faculty drawn from US & India to expose the surgeons and clinicians to the latest techniques and developments in handling diabetic foot. The 15 scientific sessions and video surgical demonstrations focused on an early diagnosis of potential foot problems among diabetic patients with exchange of experiences in treating diabetic foot infections in their own regions. Recent developments in the management of Type 2 diabetes through combination therapy in foot infection were highlighted.

The dialogue between the faculty of physicians and surgeons from US and those from India helped in the better understanding of the complex pathogenesis of the diabetic foot problem. This also paved way for the doctors from US, to learn regarding the inexpensive and effective methods of prevention and treatment in the urban and rural setting of the Indian medicare. The doctors in India also improved their existing treatment methodology by learning the advanced techniques followed in the US.

The workshop had 3 US experts from Harvard Medical School and 10 invited Indian faculties and was attended by about 150 practicing surgeons and doctors from India.

TRAVEL SUPPORT FOR BILATERAL/INTERNATIONAL EVENTS

International Workshop on Emerging Trends and Recent Developments in Ceramics and Ceramic Matrix Composites**Date and Venue:** 5-7 April, 2004, Coorg, India**Organiser:** G. Sundararajan, International Advanced Research Center for Powder Metallurgy and New Materials (ARCI), Hyderabad, India

Email: gsundar@arci.res.in

The Workshop on Emerging Trends and Recent Developments in Ceramics and Ceramic Matrix Composites focussed on the synthesis, processing and characterization of ceramics and ceramic matrix composites (CMCs), ecoceramics, bioceramics, cellular and process ceramics, nanostructured ceramics and ceramics for optical and electronic applications.



The US scientists spoke on materials processing of ceramics and ceramic matrix composites included microwave processing, biomimetic synthesis, sol-gel processing and chemical routes for nanoceramics and the unique structure and properties thus produced. High-temperature properties of structural ceramics are dependent on grain boundary microstructure to result in functional ceramic composites. Optimization of process parameters is of major interest to material scientists. High-temperature ceramic and ceramic composites find use in turbine engine components for aviation applications.

The Forum supported the participation of 7 U.S. speakers from industry and academia who presented papers in the event which was also attended by participants from France, Germany and Japan.

International Symposium on Snow Monitoring and Avalanches (ISSMA-2004)**Date and Venue:** 12-16 April 2004, Manali, India**Organiser:** Satya S. Sharma, Snow and Avalanche Study Establishment (SASE), Chandigarh, India

Email: satyasharma@hotmail.com

The need to understand the intricacies of the evolution of seasonal snow pack in different climatic zones and seek solution to the problems of snow monitoring and avalanche

mitigation in varied snow climatic regions was the focal aim of the international symposium organized by SASE at Manali.

The major themes on which papers were presented by US participants included:

- Mechanics and physics of snow in lower, mid and higher latitude region.
- Avalanche phenomenon and forecasting in warm climatic vis-a-vis cold climatic zones.
- Avalanche control engineering using structures and explosives.
- Remote sensing techniques for snow cover monitoring and avalanche hazard assessment.
- Mountain weather prediction using computational techniques for avalanche mitigation.
- Snow cover monitoring using advanced instrumentation and telemetry.

The Forum supported the participation of 5 U.S. scientists drawn from university and federal laboratories who gave lead talks in their respective sessions.



8th Asian and Oceanian Congress of Child Neurology

Date and Venue: 7-10 October, 2004, New Delhi, India

Organiser: Veena Kalra, All India Institute of Medical Sciences, N. Delhi, India

Email: veena_kalra@hotmail.com

The aim of the congress was to upgrade the practice of child neurology among pediatricians through information sharing among scientists across national boundaries. Familiarization with recent advances in technology, molecular diagnostic and therapeutic intervention and forging of international collaborative studies, were some of the topics covered under the congress.



The Forum supported participation of 5 specialists from U.S. as plenary speakers on Neuro imaging in child neurology - future perspective; Neuro-epidemiology; Mechanism of brain injury; Autism/Rett Syndrome and Peroxisomal Disorders - diagnosis and management; Intractable epilepsy- diagnosis, risk factors, therapy approach.

TRAVEL SUPPORT FOR BILATERAL/INTERNATIONAL EVENTS (CONTD.)

International conference to Review Research on Science, Technology and Mathematics Education

Date and Venue: 13-17 December, 2004, Goa, India

Organiser: Arvind Kumar, Homi Bhabha Centre for Science Education, Mumbai

Email: arvindk@hbcse.tifr.res.in

The international conference to review research on Science, Technology and Mathematics Education was held with focus on the cognitive, socio-cultural, historical and philosophical underpinnings of education in science, technology and mathematics.

The Forum supported the participation of one US expert whose path breaking work on standards project for conceptual schemas, knowledge sharing, and ontology provided the lead talk to the session on knowledge representation.

Indo-US Drug Development Meeting

Date and Venue: 12-13 January, 2005, Hyderabad, India

Organiser: J. S. Yadav, Indian Institute of Chemical Technology, Hyderabad, India

Email: yadav@iict.res.in

This preliminary meeting was initiated by two Governing Board members of the Forum and was hosted by IICT at Hyderabad. The meeting was preceded by the visit of the 5 member US delegation lead by Prof Bruce Alberts, President NAS, to three leading pharmaceutical industries in Hyderabad. The meeting had a mix of participants from industry and laboratory backgrounds from US & India.

The main idea of this meeting was to develop potential contacts between scientists working in the area of drug discovery and development with specific focus on common man diseases like TB and malaria. It was mooted to put specific efforts for an exclusive Indo-US program on drug development to make the best possible utilization of resources and talents at both sides.

Indian industry was represented by AVRA Labs, Zydus, Dr. Reddy's Lab; Glenmark Pharma, Shanta Biotech, Nicholas Piramal with scientists from IICT, CDRI and IMTECH.

International Conference on Solid State Hydrogen Storage – materials and applications

Date and Venue: 31 January – 1 February 2005, Hyderabad, India

Organiser: R. Sundaresan, International Advanced Research Center for Powder Metallurgy and New Materials (ARCI), Hyderabad, India

Email: rsundar@arci.res.in

The conference was designed to cover a variety of issues related to solid state hydrogen storage materials, ranging from processing, hydrogen storage properties, cyclic stability and lifetime assessment to material specific application development. Academia and industry representatives were provided the platform to combine the technical expertise in the field from around the world with excellent prospects for networking among the participants to enable collaborative R&D in this frontier area that would have far reaching impact on the hydrogen energy development program.



Travel support was extended to four US scientists from federal labs and universities who spoke on 21st Century's Energy: Hydrogen Energy System; U.S. National Hydrogen Storage Project; Metal Hydride Actuators; and Development of a U.S. Northwest Hydrogen Initiative.

International Conference on Science and Technology Policy: future challenges in the context of globalization

Date and Venue: 7-10 March, 2005, Chandigarh, India

Organiser: Mohsin Khan, National Institute of Science, Technology and Development, N. Delhi and Centre for Research in Rural and Industrial Development, Chandigarh

Email: mohsinuk@yahoo.com

The conference was organized with the objective to encourage international relations that speak across interdisciplinary and regional divides in the area of science technology and development with respect to national S&T policy issues. The main purpose of this conference was to make foreign researchers and entrepreneurs aware with regard to progress made by India in different sectors like information technology;



TRAVEL SUPPORT FOR BILATERAL/INTERNATIONAL EVENTS (CONTD.)

biotechnology; drugs and pharmaceutical industry as well as manufacturing sector with the aim to elicit views on integrating these developments with international S&T policy level issues.

The conference was which was sponsored by UNESCO and other agencies also had Forum support towards the participation of 3 US speakers from academia as experts on agricultural & biotechnology issues, environmental policy issues and technology transfer.

International Conference-cum Live Workshop on Minimal Access Surgery (MAS)

Date and Venue: 17-20 March, 2005, New Delhi

Organiser: Arvind Kumar, All India Institute of Medical Sciences, New Delhi

Email: arvindreena@hotmail.com



This unique multidisciplinary conference cum live operative workshop, the first of its kind in India helped to bring under one roof surgeons practicing the art of minimal access surgery (MAS) in the disciplines of general and G.I. surgery, urology, gynecology, pediatric surgery, thoracoscopy, vascular surgery and surgical oncology.

The conference was organized by the Association of Minimal Access Surgeons of India in which nearly 2000 surgeons from across the country and about 20 foreign experts took part.

The Forum extended travel grants towards participation of 3 eminent U.S. surgeons who demonstrated live G.I., obesity, pediatric and gynecological micro surgery operations. The Indian and U.S. associations on Micro Surgery have agreed to start a new initiative of academic cooperation through faculty exchange as an outcome of this event.

VISITING FELLOWSHIPS

Indo-US Microbiology Professorships

Under an arrangement between the Indo-U.S. Science and Technology Forum and the American Society for Microbiology (ASM), the Forum has initiated a Visiting Professorship program for institutions in India and in U.S. wishing to invite scientists in each other's faculty to deliver short courses in the microbiological disciplines. The program called as the Indo-US Professorship Program, is administered parallel with the ASM International Professorship Program and was awarded to 3 American academicians:

Micah L. Krichevsky, Chair, Bionomics International, Wheaton, Maryland

Indian Host : Ashok Kolaskar, Vice Chancellor, University of Pune

Course Title: Concept for establishing and operating a Microbial culture collection.

Course content: The Department of Microbiology at Pune University conducted the course towards the establishment and operation of microbial culture collection for research, teaching, quality control, production, etc. The course included establishing and operating a collection with practical concepts through lectures on collection operation, culture preservation and shipping, taxonomic algorithms, identification strategies and computer practice sessions for data management. The aim of the course was the establishment of a network of interoperable culture collections.

Nirbhay Kumar, Department of Molecular Microbiology, Johns Hopkins Malaria Research Institute, Johns Hopkins University.

Indian Host: G. Sekar, Principal, Karpagam Arts and Science College, Bharathiyar University, Coimbatore.

Course Title: Malarial Genomics.

Course content: The course primarily focused on malaria culture techniques, in-vitro anti malarial testing, genomic and bio-informatic analysis, expected to provide practical skills to participants through equipping them with the requisite skills to mount effective malaria control programs. The training program as a part of the course provided data for research-based decision making for malarial clinical treatment and prevention programs.

Bidadi Venkataraman Prasad, Department of Biochemistry & Molecular Biology, Baylor College of Medicine, Texas.

Indian Host: M.R.N. Murty, Molecular Biophysics Unit, Indian Institute of Science, Bangalore.

Course Title: Electron Cryo-Microscopy and Computer Image Reconstruction of Biological Macromolecules.

Course content: In recent years, electron Cryo-Microscopy and Computer Image Reconstruction technique (Cryo-EM) has become a powerful tool for elucidating three dimensional structures of variety of biological macro-molecules. The Cryo-EM involves three stages namely, specimen preparation, electron imaging of the specimen and computer image processing analysis leading to three dimensional reconstruction. The course was conducted to include both theoretical and practical aspects of the Cryo-EM technique along with hands on training. Indian Institute of Science, Bangalore is acquiring a Cryo-EM machine and therefore, this course was of direct relevance to the faculty.

JOINT CENTRES

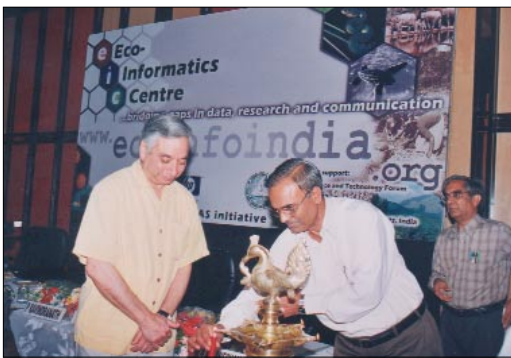
Principal Investigators:

Kamal Bawa, Ashoka Trust for Research in Ecology & Environment (ATREE),
Bangalore, India

Email: info@atree.org

Robert Stevenson, University of Massachusetts, Boston, USA

Email: Robert.stevenson@umb.edu



Support was extended towards international exchange travel grants, research associates and systems support for specific Indo-US activities in the ecological database management for conservation of biological diversity and natural resource management of the Eco-informatics Centre established by Ashoka Trust for Research in Ecology & Environment (ATREE), Bangalore, with in kind hardware support from HP (India). The database available on public domain on ecological niches will be structured and developed through collaboration with the University of Massachusetts, Boston which can eventually be used scientifically towards informed decision making.

The centre is visualized as an information sharing hub providing quality and processed ecological information to the user community including value added information on ecological data base and Natural Resource Management using advanced IT tools. This is the first Forum supported Centre on knowledge networking in partnership between academia-industry-private R&D institution. Kamal Bawa from ATREE, Bangalore and Robert Stevenson, University of Massachusetts, Boston are the project leaders for the joint activities in the Centre.

India's first Web-GIS Portal on conservation and natural resource management, as a service from the Centre has been launched (www.ecoinfoindia.org). Through this portal users can visualize, analyse, integrate and map various types of spatial data of natural resource management and conservation according to their specific needs.

ACADEMIC PARTNERS IN FORUM SUPPORTED ACTIVITIES

India

AIIMS (Academia)
 ARCI (DST)
 ATREE (Pvt R&D Inst)
 Bose Institute (DST)
 Bombay University
 CCRAS (ISMH)
 CDAC (DIT)
 CMMACS (CSIR)
 Delhi University
 Diabetic Research Centre (Pvt R&D Lab)
 FICCI (Business Association)
 HBCSE (DAE)
 IICB (CSIR)
 IICT (CSIR)
 IIP (DAE)
 IISc (Academia)
 IIT, Kanpur (Academia)
 IRAM Consult (Pvt Engg Firm)
 ISI (Dept of Statistics)
 ISRO (Dept of Space)
 ITRC (CSIR)
 Jadavpur University
 JNCASR (DST)
 NBRC (DBT)
 NCMRWF (DST)
 NCPGR (DBT)
 NEERI (CSIR)
 NGRI (CSIR)
 NIAS (Pvt R&D Inst)
 NIMH (Social Justice & Empowerment)
 NML (CSIR)
 NISTADS (CSIR)
 NML (CSIR)
 SASTRA (Academia)
 SASE (DRDO)
 SCL (DIT)
 SDTC for Tropical Diseases (Pvt R&D Inst)
 SGPGI (Academia)
 Tata Memorial Hospital (Pvt R&D Inst)
 TIFAC (DST)
 TERI (Pvt R&D Lab)
 University of Mysore

USA

ASM (Society)
 ACDI/VOCA (NGO)
 AIAA (Pvt Society)
 Argonne National Lab (DOE)
 CDC, Atlanta
 Harvard Medical School
 JFK School of Government, Harvard
 Louisiana State University
 Montana State University
 NAS (Academies)
 NCCAM (NIH)
 NIDRR (Dept of Education)
 NIMH (NIH)
 NOAA
 New York University
 Ohio State University
 Oregon State University
 Purdue University
 University of Arkansas
 University of California at Davis
 University of California at LA
 University of California at Santa Barbara
 University of Cincinnati
 University of Florida
 University of Illinois at Chicago
 University of Illinois at Urbana Champaign
 University of Massachusetts, Boston
 University of New York at Buffalo
 University of Virginia
 USAID
 US Army Medical Research Command
 US Geological Survey (USGS)
 Virginia Oncology Centre
 Virginia Tech Old Dominion Univ
 Virginia Commonwealth University

(* in alphabetical order)

Financial Statement

2004 – 2005

FINANCIAL STATEMENT - AUDITORS' REPORT

The Members,
Governing Body,
Indo-US Science and Technology Forum
New Delhi

We have audited the attached Balance Sheet of INDO-US SCIENCE AND TECHNOLOGY FORUM, New Delhi as at 31st March, 2005, the Income and Expenditure Account and Receipts and Payments Account for the year ended on that date and report that:

1. We have obtained all the information and explanations which to the best of our knowledge and belief, were necessary for the purpose of the audit;
2. The Forum has maintained proper books of accounts so far appears from the examination of such books;
3. The Balance Sheet, Receipts and Payments Account and Income and Expenditure Account are in agreement with the books of account;
4. In our opinion and to the best of our information and according to the explanations given to us, the said accounts read with the attached notes thereto, give a true and fair view;
 - a) In the case of the Balance Sheet, of the state of affairs of the above named Forum as at 31st March, 2005.
 - b) In the case of the Receipts and Payments Account together with Income and Expenditure Account, of the surplus for the year ending 31st March, 2005.

For RAJEEV NEELAM & ASSOCIATES
CHARTERED ACCOUNTANTS

RAJEEV K. GUPTA
PROPRIETOR
M. No. 87128

Place: New Delhi
Date : 3rd September, 2005

BALANCE SHEET AS AT 31ST MARCH, 2005

LIABILITIES	Schedules	As At 31st March, 2005		As At 31st March, 2004	
		Amount Rs.		Amount Rs.	
US Endowment Fund		319,800,000		319,800,000	
Opening Balance		178,832,278		151,014,623	
Add : Surplus of Income Over Expenditure		<u>29,757,715</u>	208,589,993	<u>27,817,655</u>	178,832,278
Total		528,389,993		498,632,278	
ASSETS					
Fixed Assets:					
Gross Block	A	2,871,358		825,095	
Less: Depreciation to date		<u>864,497</u>		<u>443,629</u>	
Net Block :		2,006,861		381,466	
Cash and Bank Balances:					
a) Term Deposit with Banks-					
Bank of America - FDR (Endowment)		319,800,000		319,800,000	
Bank of America - Short Term Deposits		72,500,000		62,500,000	
Union Bank of India - Short Term Deposits		<u>108,201,369</u>	500,501,369	<u>92,800,000</u>	475,100,000
b) Balance with Banks-					
Bank of America - Savings A/c		3,025,691		10,100,556	
UTI-Bank Saving A/c		16,923,796			
Union Bank of India - Savings A/c		<u>4,209,728</u>	24,159,215	<u>1,458,472</u>	11,559,028
c) Cash In Hand					
			117		1,356
d) Advances For Scientific & Other Expenses B					
			1,312,800		11,269,428
e) Sundry Deposits					
Rent Security		390,000		300,000	
Telephone Security		12,000		12,000	
Cell Phone Security		<u>7,631</u>	409,631	<u>9,000</u>	321,000
Total		528,389,993		498,632,278	

Accounting Policies and Notes to Accounts F

Subject to our Report of even date

For **RAJEEV NEELAM & ASSOCIATES**

CHARTERED ACCOUNTANTS

RAJEEV K. GUPTA
PROPRIETOR

ARABINDA MITRA
EXECUTIVE DIRECTOR

R. VARADARAJAN
MANAGER (F & A)

Place: New Delhi

Date : 3rd September, 2005

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2005

	Schedules	For the Year Ended 31st March 2005 Amount Rs.	For the Year Ended 31st March 2004 Amount Rs.
INCOME			
Contribution from Department of Science and Technology - Government of India		33,670,997	33,579,000
Bank Interest Received on:			
US Endowment FDR		33,670,997	33,579,000
Short Term Deposits with Bank of America		2,514,342	2,531,171
Short Term Deposits with Union Bank of India		4,854,080	3,768,154
Savings Bank Account (Bank of America/UBI)		<u>283,865</u>	<u>389,903</u>
		41,323,284	40,268,228
Unspent Grants Refunded from Workshops	C	1,274,368	4,499
Total		76,268,649	73,851,727
EXPENDITURE			
Scientific Expenses	D	37,775,978	38,238,988
Establishment & Office Expenses	E	5,969,933	2,367,374
Governing Body Expenses			
Governing Body Meeting Expenses		2,344,155	4,343,491
Office Renovation Expenses			
Interior Work at Forum's Office		-	932,105
Depreciation on Assets	A	<u>420,868</u>	<u>152,114</u>
Total		46,510,934	46,034,072
Surplus of Income Over Expenditure Carried over to the Balance Sheet		29,757,715	27,817,655

Accounting Policies and Notes to Accounts F

Subject to our Report of even date

For RAJEEV NEELAM & ASSOCIATES

CHARTERED ACCOUNTANTS

RAJEEV K. GUPTA

PROPRIETOR

ARABINDA MITRA

EXECUTIVE DIRECTOR

R. VARADARAJAN

MANAGER (F & A)

Place: New Delhi

Date : 3rd September, 2005

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2005

Schedules	For the Year Ended 31st March 2005	For the Year Ended 31st March,2004
	Amount Rs.	Amount Rs.
RECEIPTS		
Balances Brought Forward		
a) Terms Deposits With Banks		
Bank of America-FDR (US Endowment Fund)	319,800,000	319,800,000
Bank of America-Short Term Deposits	62,500,000	62,500,000
Union Bank Of India-Short Term Deposits	92,800,000	79,500,000
	<u>475,100,000</u>	<u>461,800,000</u>
b) Balance With Banks		
Bank of America-Savings A/c	10,100,556	7,018,499
Union Bank Of India-Savings A/c	1,458,472	742,990
	<u>11,559,028</u>	<u>7,761,489</u>
c) Cash In Hand		
	1,356	113
d) Advance For Scientific Expenses		
	11,269,428	709,807
Subtotal	497,929,812	470,271,409
Endowment/ Grant-in-Aid Received		
Contribution From Department of Science and Technology (Government of India)	33,670,997	33,579,000
Bank Interest Received on		
US Endowment FDR	33,670,997	33,579,000
Short Term Deposits with Bank of America	2,514,342	2,531,171
Short Term Deposits with Union Bank of India	4,854,080	3,768,154
Savings Bank Account (Bank of America/UBI)	283,865	389,903
	<u>41,323,284</u>	<u>40,268,228</u>
Unspent Grants Refunded		
Refund Received From Various Workshops	1,274,368	4,499
Security Refund	1,369	-
Total	574,199,830	544,123,136
PAYMENTS		
Scientific Expenses	37,775,978	38,238,988
Establishment and Office Expenses	5,969,933	2,367,374
Fixed Assets Purchases	2,046,263	66,755
Governing Body Meeting Expenses :	2,344,155	4,343,491
Sundry Advances		
Office Renovation Expenses	-	932,105
Margin for Office Renovation Refunded	-	244,611
Rent Security	90,000	1,176,716
	<u>90,000</u>	<u>1,176,716</u>
Sub Total c/d	48,226,329	46,193,324

Schedules	For The Year Ended 31st March, 2005 Amount Rs.	For The Year Ended 31st March, 2004 Amount Rs.
Sub Total b/d	48,226,329	46,193,324
Balances Carried Forward		
a) Term Deposits with Banks		
Bank of America - FDR (Endowment Fund)	319,800,000	319,800,000
Bank of America - Short Term Deposits	72,500,000	62,500,000
Union Bank of India - Short Term Deposits	108,201,369	92,800,000
	500,501,369	475,100,000
b) Balance with Banks		
Bank Of America - Savings Account	3,025,691	10,100,556
UTI -Bank Saving A/c	16,923,796	-
Union Bank Of India - Savings Account	4,209,728	1,458,472
	24,159,215	11,559,028
c) Cash In Hand	117	1,356
d) Advances For Scientific Expenses	B 1,312,800	11,269,428
Total	574,199,830	544,123,136

Accounting Policies and Notes to Accounts F

Subject to our Report of even date

For RAJEEV NEELAM & ASSOCIATES

CHARTERED ACCOUNTANTS

RAJEEV K. GUPTA
PROPRIETOR

ARABINDA MITRA
EXECUTIVE DIRECTOR

R. VARADARAJAN
MANAGER (F & A)

Place: New Delhi

Date : 3rd September, 2005

SCHEDULES

Schedule ' A '

Fixed Assets:

Sl. No.	Particulars	GROSS BLOCK			DEPRECIATION			NET BLOCK	
		Balance as on 01.04.2004	Additions during the Year	Total	Upto 31.03.2004	For the Year	Total	Balance as on 31.03.2005	Balance as on 31.03.2004
1	Air Conditioner	470,125	-	470,125	117,531	88,149	205,680	264,445	352,594
2	Computers	341,675	1,376,258	1,717,933	320,281	288,088	608,369	1,109,564	21,394
3	Furniture	-	235,060	235,060	-	3,472	3,472	231,588	-
4	Office Equipments:								
	Mobile	13,295	21,650	34,945	5,817	6,831	12,648	22,297	7,478
	Fax Machine	-	36,995	36,995	-	3,083	3,083	33,912	-
	EPABX System	-	232,710	232,710	-	19,393	19,393	213,317	-
	Fire Extinguisher	-	9,990	9,990	-	833	833	9,157	-
	Photo Copier	-	128,100	128,100	-	10,675	10,675	117,425	-
	Room Heater	-	5,500	5,500	-	344	344	5,156	-
	Total	825,095	2,046,263	2,871,358	443,629	420,868	864,497	2,006,861	381,466
	Previous Year	758,340	66,755	825,095	291,515	152,114	443,629	381,466	

Schedule ' B '

Advances for Scientific & Other Expenses

	As On 31st March, 2005 Amount Rs.	As On 31st March, 2004 Amount Rs.
Nano Scale Material Workshop	-	1,339,920
Microbiology Professorship-ASM	-	533,508
Space Science Conference	-	9,120,000
Ceramic Composities	-	276,000
Diabetic Foot Complications	325,050	-
MAB Training Programme	987,750	-
Total	1,312,800	11,269,428

SCHEDULES TO RECEIPT & PAYMENT / INCOME & EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31ST MARCH, 2005

Schedule 'C'**Refund of Workshop/ Project Outlays**

	For the Year Ended 31st March, 2005	For the Year Ended 31st March, 2004
	Amount Rs.	Amount Rs.
HPC on Weather & Climate	-	4,499
Infectious Diseases	311,539	-
Mathematical Society Meetings	192,982	-
Molecular Toxicology & Environmental Health	25,943	-
NMR Drug Design & Informatics	34,067	-
Online Science Education	160,485	-
Seismicity & Geodynamics	316,832	-
Traditional Medicine	84,983	-
Transport of Air Pollutants	104,159	-
Women in Science Work	43,378	-
	1,274,368	4,499

Schedule 'D'**Scientific Expenses****1. Workshops & Symposiums**

Agricultural- Bio Technology	-	1,075,488	
Arsenic Contamination of Ground Water	-	181,454	
Austism Spectrum Disorders	1,000,310	1,244,700	
Ceramic Composites	766,657	-	
Chemical Engineering in Global Environment	2,201,301	-	
Child Neurology	516,719	-	
Cancer Networking	-	425,000	
Digitral Libraries	-	3,147,447	
Drug Design and Bioinformatics	-	300,000	
Energy R & D	1,959,075	-	
Fuel Cell Workshop	-	21,468	
Functional Genomics	268,669	-	
Futuristic Manufacturing	1,125,197	902,070	
Green Chemistry	31,400	1,495,627	
Infectious Disease	-	3,939,798	
INAE Nano Technology 2003	38,540	220,000	
International Confrence on Statistical Physics	163,560	-	
Intelligent Processing of Metallic Materials	813,400	1,085,400	
Minimal Access Surgery	175,000	-	
Molecular Toxicology & Enviornment	-	504,000	
Nano Scale Materials from S & T	2,506,713	-	
Nano Tech. and Health Care	-	420,406	
Number Theory Workshop	300,000	525,000	
Radical Innovation	2,436,259	-	
Radiation Physics	-	1,890,159	
Science Education	-	1,135,326	
Seismicity & Geodynamics	-	1,938,012	
Snow Monitoring & Avalanches	751,168	-	
Solid State Hydrogen Storage	208,540	-	
S & T and Mathematics Education	81,881	-	
S & T Policy and Globalisation	216,000	-	
Symposium on Hepatities-E Virus	1,385,734	-	
S & T Counter Terrorism Workshop	-	3,663,467	
Traditional Medicines	-	2,521,105	
Transport of Air Pollutants	-	1,434,045	
Women in Science Work	-	315,000	28,384,972
Sub Total c/d	16,946,123	28,384,972	

	For the year ended 31st March, 2005 Amount Rs.		For the year ended 31st March, 2004 Amount Rs.	
Sub Total b/d		16,946,123		28,384,972
2. Projects/ Networked R & D Centre				
Neural Thermodynamics	-		538,486	
Eco-Informatics Center	1,138,500	1,138,500	1,922,223	2,460,709
3. Preparatory Meetings/Exploratory Visits				
Climate Change Science	2,245,057		-	
Frontiers of Engineering	3,952		-	
Frontiers of Science Preparatory Meeting	-		1,951	
Genomics Preparatory Meeting	-		5,181,197	
Hydrogen Fuel Roadmap Meeting	-		1,690	
Mathematical Society Meeting	-		2,126,272	
Neuro Scientists Meeting	-		16,500	
Neutrino Physics Meeting	-	2,249,009	65,697	7,393,307
4. Visiting Professorships				
Microbiology Professorship		1,104,208		-
5. Flagship S & T Programmes				
Frontiers of Science	6,449,388		-	
Space Science Conference	9,888,750	16,338,138	-	-
Total		37,775,978		38,238,988
Schedule 'E'				
Establishment & Office Expenses				
Advertising Expenses		63,518		545,203
Audit Fees		16,530		12,960
Conveyance Charges		3,324		728
Communication Expenses		292,834		44,388
Staff Selection Expenses		537,255		-
Establishment Expenses		19,000		10,000
Foundation Day Expenses		306,371		-
Office Maintenance		962,125		24,300
Office Expense		17,442		23,629
Office and Other Rentals		1,231,913		972,000
Peer Review Process in US		548,750		-
Printing & Stationery		600,241		202,952
Postage & Courier		21,651		7,192
Professional Fees		40,000		-
Repairs & Maintenance		48,644		-
Salaries		212,429		53,855
Subscription		21,838		-
Security Charges		-		8,499
Travelling Expenses		424,196		154,361
Vehicle Hire Charges		267,922		204,307
Web Development Charges		333,950		103,000
Total		5,969,933		2,367,374

Schedule 'F' Accounting Policies and Notes to the Accounts

(Attached to and forming part of the Balance Sheet and Income and Expenditure Statement for the year ended 31st March, 2005)

1. ACCOUNTING POLICIES:

- a. The Forum has adopted cash system of accounting.
- b. Any surplus of Receipts over Payments is carried forward to next year for utilization as per Objectives of the Forum.
- c. All receipts of interest against Time Deposits with the bank are accounted for on actual receipt/ credit in the bank account of the Forum.
- d. All the assets acquired for research projects remain with the institution where the research work is carried on. The Forum however retains the right to transfer those assets to other institution if so required, on completion of the projects for which the assets are purchased. The expenditure on those assets are accounted for in the Income & Expenditure Account under the head "Scientific Expenditure" or such similar account and hence such assets are not taken in the Balance Sheet of the Forum.
- e. Funds released for various research projects are shown as Scientific Expenditure in the Income & Expenditure Account on the basis of disbursements made by the Forum and not on the basis of the expenditure on the projects by receiving institutions out of the disbursements.
- f. Contingent Liabilities in respect of any ongoing or projected activities are not provided for as expenses.
- g. Additional disbursements made for workshops/ seminars/ projects etc. undertaken during the year, but paid for in the subsequent year, or any unspent amounts received back out of current year disbursements, but received in subsequent year, are accounted for in the year of payment/ receipt.
- h. Payment/ disbursements for Seminars/ Projects or such events not performed during the year, are carried forward as advance and accounted as expenditure in the year in which the Seminar/ project etc. is held.

2. NOTES TO ACCOUNTS:

- a. The Forum has applied with Income Tax Authorities for Notification as Scientific Institution under Rule-6 of the Income-tax Act, 1961, approval of which is awaited.
- b. The Forum has been recognized as a Scientific and Industrial Research Organisation (SIRO) by the Department of Scientific and Industrial Research (DSIR) for the period from 01.04.2003 to 31.3.2006.

c. Total interest received on FDR-US Endowment Fund and matching contribution from the Department of Science and Technology, Government of India, upto 31st March, 2005:

	Upto Financial Year 2003-04 (Rs.)	For the Financial Year 2004-05 (Rs.)	Total upto 31.03.2005 (Rs.)
Interest on US Endowment FDR with Bank of America	117,664,496	3,36,70,997	15,13,35,493
Matching contribution from Department of Science & Technology, Government of India	117,664,496	3,36,70,997	15,13,35,493

d. The previous year figures have been regrouped wherever necessary to conform to current year's classification.

Subject to our Report of even date

For RAJEEV NEELAM & ASSOCIATES

CHARTERED ACCOUNTANTS

RAJEEV K. GUPTA
PROPRIETOR

ARABINDA MITRA
EXECUTIVE DIRECTOR

R. VARADARAJAN
MANAGER (F & A)

Place: New Delhi

Date : 3rd September, 2005

ADDRESS OF THE FORUM

Indo-US Science & Technology Forum

Fulbright House, 12 Hailey Road

New Delhi – 110 001

India

Phone : 91-11- 5269 1700

Fax: 91-11- 2332 1552

Website : www.indousstf.org

CONTACT POINTS**In India****Dr. Arabinda Mitra**

Executive Director

Indo-US S&T Forum

Phone : 91-11-2332 1555

Email : amitra@indousstf.org

In USA**Mr. Michael Cheetham**

Director, India S&T Partnership

Smithsonian Institution

Phone : 1-202-633-4784

Email : mcheetham@si.edu

OTHER CONTACTS**Dr. Bhusan K. Jain**

Advisor

Department of Science & Technology

Ph: 91-11-2696 1583

Email: jainbk@nic.in

Dr. Kamal K Dwivedi

Counselor for Scientific Affairs

Indian Embassy, Washington DC

Ph: 1-202-939-9803

Email: kkdwivedi@indiagov.org

Mr. R. Varadarajan

Manager

Indo-US S&T Forum

Ph: 91-11-2332 1533

Email: rvaradarajan@indousstf.org

Dr. Marco Di Capua

Counselor for Scientific Affairs

US Embassy, New Delhi

Ph: 91-11-2419 8000

Email: dicapuams@state.gov



Indo-US Science & Technology Forum

Fulbright House, 12 Hailey Road

New Delhi – 110001

India

Phone: 91-11-52691700

Fax: 91-11-23321552

Website: www.indoustf.org