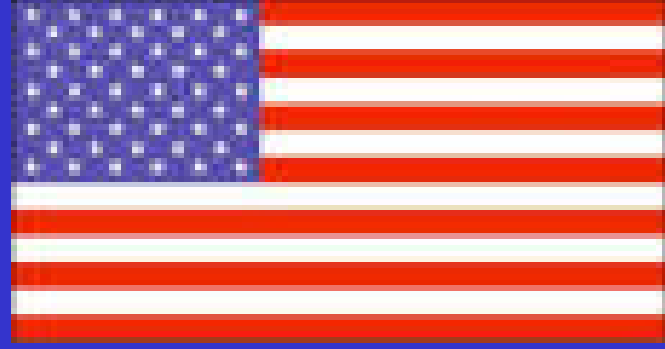


INDO - US
S & T COOPERATION

Presentation by
Dr. A. MITRA
Director
International Division
Department of Science & Technology
Government of India

PRESENTATION COVERS

- History of Indo-US Cooperation
- Existing arrangements
  - DST- NSF Collaborative Program
  - Biotechnology & Information Technology
  - NASA-NOAA / ISRO-DST MoU
  - Indo-US S&T Forum

HISTORY OF INDO - US S & T COOPERATION

1950's	Era of Green revolution facilitated with the PL 480 Funds
1960's	Establishment of IIT, Kanpur; NCERT, N. Delhi
1970's	NASA-ISRO - SITE (Satellite Instructional Television Expt)
1980's	Indo-US S&T Sub commission STI (Science & Technology Initiative) USIF (US-India Fund)
1990's	Indo- US Fellowships Program
	DST-NSF S&T Collaboration Program
	NASA-NOAA / ISRO-DST MoU
	DBT/ICMR-NIH Health & Medical Sciences Programs
2000	Indo - US SCIENCE & TECHNOLOGY FORUM
	Indo-US Biotechnology Alliance
	High Technology Coop Group(Nano, Info, Bio & Def Tech)

DST – NSF S&T COLLABORATIVE PROGRAM

- DST & National Science Foundation, USA agreement entered in 1998
- Supports bilateral project based Exchange Visits with objective to facilitate interaction between scientists & engineers
- Currently **65 projects** are supported under this program involving various labs, institutions and universities in India & USA
- Projects are in various frontier areas like nuclear physics, crystallography, stellar astronomy, microelectronics & computing, engineering, molecular biology & biotechnology, metallurgy & material sciences, atmospheric & earth sciences.
- Joint Indo - US **workshops** in areas of mutual interest are also supported under the program (Noise & Vibration Engineering; Computational Archeology; Interaction of Energetic Photons with Matter; Organo-metallic Catalysis; Molecular Biology of Mycorrhizal Fungi, Tissue Culture, Linear Collider)
- Indo – U.S. **Networking on Material Sciences** under establishment.

DST – NSF S&T COLLABORATIVE PROGRAM

- **MODALITIES OF PROJECT SUBMISSION**
- **DEADLINE DATES - 1 Feb & 1 Sept.**
- **FUNDING LEVELS - Supports air travel expenses & local hospitality costs on reciprocal basis.**
- **CONTACT PERSONS**

  DST: DR. ARABINDA MITRA. **E-mail:** amitra@alpha.nic.in

  NSF: DR. MARJORIE LUECK. **E-mail:** mlueck@nsf.gov
- **VISION - facilitate one to one interaction between scientists in order to promote S&T collaboration in areas of mutual interest & expertise**

DEPARTMENT OF BIOTECHNOLOGY

INDO-US VACCINE ACTION PROGRAMME

Date of start : ***July, 1987*** ***Proposed Duration :*** ***July, 2007***

Projects Implemented: **35** **Completed :** **18**

On-going : **17**

INDO-US CONTRACEPTIVE AND REPRODUCTIVE HEALTH RESEARCH

Date of start : **Nov. 1997** **Proposed Duration :** **Nov. 2007**

Priority Areas Identified: **8**

Projects Implemented: **18**

Workshops Conducted: **7**

Trainings Held: **6**

INDO-US COLLABORATION IN BRAIN RESEARCH

Date of Start: **October, 1999**

Collaboration elements:

- **Organization of Workshops**
- **Training Opportunities for Researchers**
- **Exchange of Scientists**
- **Consultation**
- **Exchange of Information & Materials**

DEPARTMENT OF BIOTECHNOLOGY

U.S. INDIA BIOTECHNOLOGY ALLIANCE

- **Confederation of Indian Industry**
- **U.S. – India Business Council**

Date of implementation: November 7, 2002

Proposed activities

- **Exchange and share information on trade, investment & business**
- **Interaction of business representatives**
- **Exchange visits, joint conferences and seminars**

SOME APPLICATIONS USING KNOWLEDGE MANAGEMENT

- Creation, Identification, Sharing of knowledge in an enterprise
- Disaster forecasting, mitigation and management (Coal Mines, Earth Quakes, Floods etc.)
- Decision Support System for Environmental and Water Resource Management
- Enforcement of International Good Management Practices (GMP) in drug manufacturing.
- New drug development through knowledge sharing.

GROWTH OF INTERNET, CONVERGENCE, APPLICATIONS AND SECURITY ASPECTS

- Next Generation Internet Initiative, Wireless Technology
- Information Security/Cyber Crime & Forensic/Cyber Terrorism
- Embedded Systems, Ubiquitous computing, VLSI Design, Software Engineering.
- E-Commerce, Smart Card, Bio-Informatics

NASA – NOAA / ISRO – DST MoU

AGGREEMENT SIGNED IN DEC 1997 WITH COOP IN AREAS OF:

- ❖ WEATHER FORECASTING & MODELLING
- ❖ DISASTER MANAGEMENT
- ❖ TROPICAL RAINFALL MEASURING MISSION
- ❖ OCEAN & LAND SURFACE PRECIPITATION PARAMETERS
- ❖ GLOBAL BIO-GEOSPHERE PROGRAM

- ➢ 7 PROJECTS WERE INITIATED WITH IMD & ISRO AS INDIAN PARTNERS
- ➢ 2 DEDICATED COMMUNICATION LINKS FOR EXCHANGE OF REAL TIME SATELLITE DATA ESTABLISHED
- ➢ DATA CENTRE ESTABLISHED AT IMD, DELHI
- ➢ UPGRADATION OF KARANKAL WEATHER RADAR & DATA ANALYSIS

AGGREEMENT RENEWED IN DECEMBER 2002

INDO – US EARTH AND ATMOSPHERE WORKSHOP HELD IN WASHINGTON IN DEC 2002 WHICH IDENTIFIED THE PROJECT AREAS:

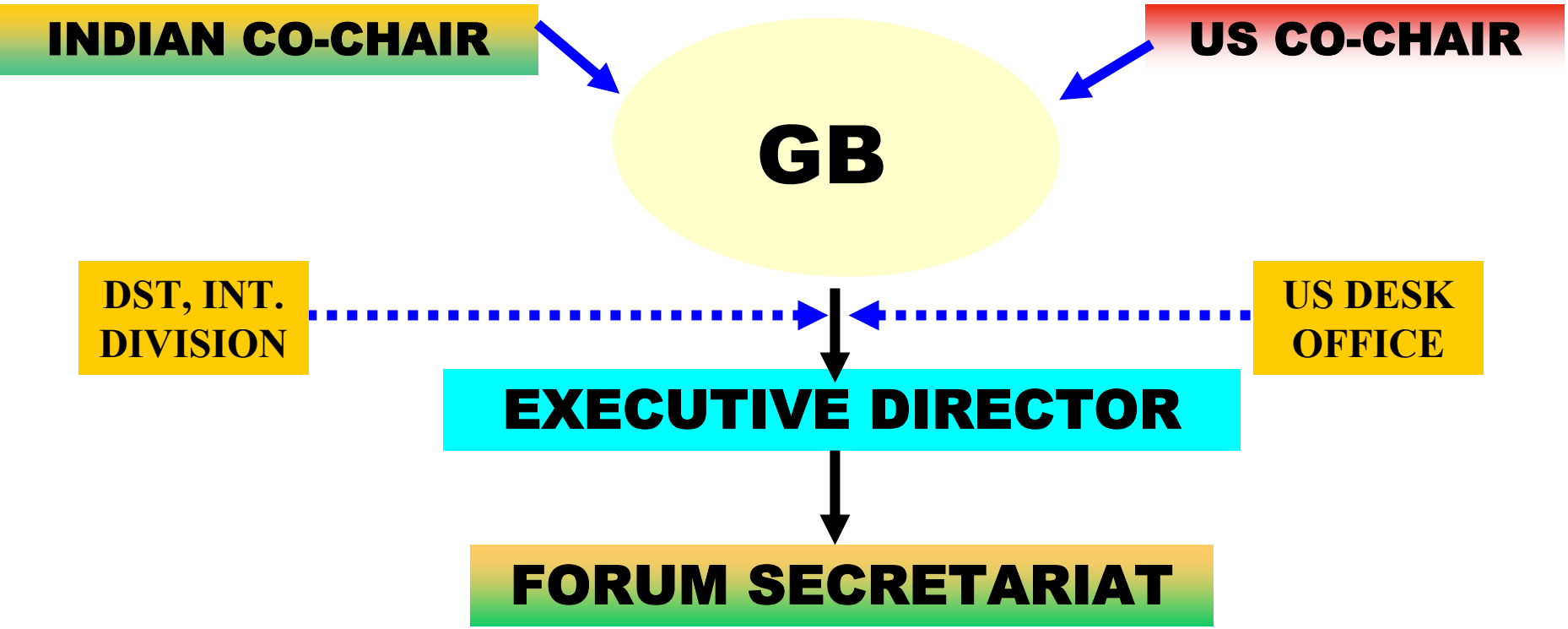
- CLIMATE & ATMOSPHERIC SCIENCES
- DISASTER MANAGEMENT
- GEODYNAMICS
- OCEAN RESEARCH
- PRECIPITATION & HYDROLOGY
- DATA & PRODUCT EXCHANGE

INDO-US SCIENCE AND TECHNOLOGY FORUM

www.indousstf.org

INDO - US S&T FORUM

STRUCTURE OF THE FORUM



ADMINISTRATIVE: MECHANISM	BILATERAL NON GOVERNMENTAL, NON PROFIT, SCIENTIFIC REGISTERED SOCIETY UNDER INDIAN LAWS
FUNDING: SOURCE	ANNUAL INTEREST FROM ENDOWNMENT FUND AS U.S. CONTRIBUTION MATCHING CONTRIBUTION FROM DST, GOVT. OF INDIA

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INDO - US S&T FORUM

OBJECTIVES OF THE FORUM

The Forum is a CATALYST to facilitate and promote the interaction in India and the United States, of government, academia and industry in science and technology with following objectives at the backdrop

- **to focus on issues of common concern and activities of mutual benefit while exploring trends in S&T**
- **to create comprehensive electronic reference source for Indo-US S&T cooperation**
- **to promote electronic exchange and dissemination of information and opportunities in bilateral S&T cooperation**
- **to commission studies, reports and papers and promote Indo-US cooperation in R&D and transfer of technology**
- **to identify and facilitate joint collaborative projects and programs and organise workshops, seminars, symposia, courses and training programs**
- **to establish Indo-US Centres of excellence at places in India**

www.indousstf.org

INDO - US S&T FORUM

Vision: ***Possibility to expand the role of the Forum beyond its catalytic role to enable the pursuit of joint research and development projects in S & T.***

Indicative Thrust Areas for Mutual Cooperation

- Distributed Energy Systems including Hydrogen Fuel;
- Renewable Energy Sources (biofuels and bioenergy);
- Nanotechnology, 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-Weather Systems and Natural Disasters;
- Brain Research, covering developmental neurobiology & computational neuroscience; biomedical engineering including telemedicine; health and pharmaceuticals;
- Human and Plant Genomics, including bioinformatics & biotechnology;
- Universal Digital Library & Distance Learning, Communication and Neural connectivity;
- Information Technology and e-security;
- S&T to Counter Terrorism;
- High Energy Physics and Astro-physics.

INDO-US SCIENCE AND TECHNOLOGY FORUM

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INDO - US S&T FORUM

ACTIVITY PORTFOLIO

Ongoing & Possible Program Initiatives

- Support joint workshops and symposia in India & the US in emerging areas of S&T
- Joint R&D project of mutual interest
- Travel Grants for exploratory visits & conference/symposium in India & USA
- Internship program for graduate students in India and USA
- Visiting Professorship Program in India and USA
- Forum Frontiers Symposium of young scientists/technocrats
- Identify and initiate few flag projects with societal benefit and impact
- Interface private and public sector participation in joint R&D efforts
- Distinguished Lecture series
- Catalyse training and capacity building programs
- Catalyse to establish Centers of Excellence and Networked Centres
- Create database on various aspects of S&T and R&D

ACADEMIC ACTIVITIES(WSp)

- Nano-Technology (at Santa Barbara)
- ARGO Floats (at Hyderabad)*
- Nano Computing (at Thanjavur)*
- Brain Research (at New Delhi)
- Weather & Climate Modeling (at New Delhi)
- Fuel Cells (at Washington)
- Cancer Networking (at Jaipur)*
- High Performance Computing (at Bangalore)
- Nano-technology & Health Care (at Thanjavur)*
- Bio-diversity Conservation (at Kolkata)*
- Arsenic Contamination & Geno-toxicity (at Kolkata)
- Eco-informatics (at Bangalore)
- Radiation Physics (at Argonne)
- Agricultural Biotechnology (at Delhi)
- Digital Library (at Virginia Tech)
- E- Learning (at Nagpur)
- Functional Genomics (at Bangalore)
- Seismicity & Geodynamics (at Hyderabad)

ACADEMIC ACTIVITIES

ROUNDTABLES WERE ORGANISED:

- With eminent scientists from two countries at Washington, New Delhi & Hyderabad
- Business Councils and eminent scientists at New Delhi)
- Neuroscientists of India and USA in Florida

EXPLORATORY VISITS SUPPORTED FOR:

- Genomic Research
- Ground Water pollution studies
- Indo-US Forum Frontiers Symposium
- S&T to Counter Terrorism

PLANNED ACADEMIC ACTIVITIES

Traditional Medicine at Delhi

- Green Chemistry at Delhi
- Air Pollution Modeling at Nagpur
- Industrial Environmental Toxicology at Lucknow
- ICON 2003- Nanotechnology at Chandigarh
- Indo-US Mathematical Conference at B'lore
- S&T to Counter Terrorism at Goa
- Tropical Infectious Diseases at B'lore
- Intelligent Metal Processing at Goa
- Autism at Hyderabad
- Nano Scale Materials: from S to T at Puri
- Distributed Power at Delhi
- Plasticulture Industry at Chennai
- Cyber Security at Kolkata
- Indo –US SPACE Conference at B'lore
- Indo – US Forum Frontiers Symposium in India

ACADEMIC ACTIVITIES

JOINT R&D PROJECTS IN AREAS OF :

- Weather and Climate Modeling
- Hydrogen Road Map for India
- Neural Thermodynamics

CONTACT POINTS :

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WEB SITE: www.indousstf.org

THANK YOU