RESEARCH COLLABORATION

International research collaboration has always helped scientists to keep abreast of international science and to share expertise and resources. Today, one-fifth of the world's scientific papers are coauthored internationally — a result of increasingly easy communication and cross-border travel. However, a new character of international collaboration is emerging, as scientific research has become an integral part of economic and innovation policy. International collaboration has also become a key element in globalization strategy. Research collaboration supports research, training and knowledge transfer in everything from architecture to zoology, apart from supporting world-class research facilities. It also promotes public engagement in science, engineering and technology. The knowledge and expertise gained through investment in people and innovation allows the world to maintain a technological leading edge, build strong global economy and improve quality of life for people. International research collaboration requires work in partnership with other research investors including government departments and agencies, universities and colleges, and industry. Research collaboration extends across disciplines and organizational boundaries. Some of the main fields for research collaboration are:

- ARTS AND HUMANITIES
- BIOTECHNOLOGY & BIOLOGICAL SCIENCES
- ECONOMIC AND SOCIAL SCIENCES
- ENGINEERING AND PHYSICAL SCIENCES
- MEDICAL SCIENCES
- NATURAL ENVIRONMENT
- SCIENCE AND TECHNOLOGY

Today global networks are known to have contributed significantly to the success of Silicon Valley, USA. It has been possible for the USA to benefit directly from the information technology boom in India by being connected. The success of India is not only from cheap labor but also from attracting global R&D activities. Recent trends indicate that USA is keen to establish connections with the new powerhouse economy of India — not only in downstream industries but also in upstream science. The world as a whole is increasingly united on the need for research and innovation to tackle global challenges such as poverty and climate change. The growing international concern regarding greenhouse gases, crises in Africa, or diseases in developing countries are leading to new hopes about international research collaboration to address these issues.

The United States was one of the first nations to establish an approach to attract "the best and the brightest" in the world to their institutions. This policy placed the United States at the heart of international research collaboration, with US researchers co-authoring with researchers from over 170 countries. The unique US position was based first, on the openness of financial aid and fellowships to support any deserving graduate student. This system grew through generous federal research funding and also by means of institutional competition to attract the best graduate students. Second, the tradition of openness in hiring academics dated back to World War II, during which many prominent European scientists moved to the United States. Third, the US labor market has been open to immigrants — particularly for highly skilled ones who could get companies to sponsor them.

Today, more countries are taking comparable approaches to attract "the best and the brightest" through similar policies to open up. There is stepped-up competition for international students undertaken by several countries — most notably Australia, the United Kingdom, Japan, and China. India is on the threshold of joining this competition.

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Another approach to international collaboration is to invest in world-class research centers of excellence. Singapore was one of the first countries to use public money for attracting world-class institutions. Singapore has become a major Asian education and research center, by creating high-profile international partnerships (with the Massachusetts Institute of Technology, Stanford, Berkeley, and Wharton—to name but a few), inviting world-class foreign universities to open campuses (e.g., INSEAD, University of Chicago Business School, and Waseda), and by its ambitious biomedical science park, Biopolis. India has a great opportunity to enter into similar partnerships with American universities.

For a developing country such as India, these steps are likely to lead to increases in scholarship and research collaboration opportunities. International research collaboration has entered an era in which networking has a direct economic significance. Some governments are already beginning to pay a premium to become hubs in global excellence networks. These developments will produce significant changes in the world's research capacity and yield new centers of excellence. The Council of Scientific & Industrial Research (CSIR) is the premier industrial research and development organization in India. Its chain of 39 R&D laboratories with 80 field stations spread across India are manned by 10,000 highly qualified scientists and engineers and 13,000 auxiliary and other staff, covering almost the entire spectrum of industrial R&D, ranging from aerospace to mining, microelectronics to metallurgy. CSIR can play an important role in promoting international research collaboration. There are a good number of universities and colleges in India that have research programs and these trends indicate opportunities for capacity building for research in India.

With several billion dollars in annual research funded by the National Science Foundation, the National Institutes of Health, corporate partners, and other Federal and Private Foundations, American universities are major research centers in the world. Award-winning faculty members provide undergraduate and graduate students with research opportunities in a multitude of disciplines. American universities work with faculty and outside partners to capitalize on opportunities to expand research and scholarship across all intellectual fields. This includes developing new programs, making strategic investments to seed new research initiatives and assisting faculty in obtaining funding from sponsors. Research collaboration between Indian institutions and foreign universities will be a “win, win” for all.

Given below is a list of top foreign Universities visiting India for participating in the Indo-Global Education Summit 2012. The major fields in which they are interested in collaborating with well established Indian institutions are also mentioned.

**ACADEMIC CENTRE OF LAW & BUSINESS**

Law and Business Administration

**ANTON DE KOM UNIVERSITY OF SURINAME**

Interested in lecturers and Research in Sustainable Development; Exchange of Lecturer

**ASTON UNIVERSITYST**

Yes we are interested in pursuing Research Collaborations with Indian Institutions. Our research interests are as follows:

The School of Life & Health Sciences pursues interdisciplinary research in the Biomedical Sciences, Health Sciences and Neurosciences at the interface between laboratory and clinic. The School leads the Aston Brain Centre (ABC) and

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the Aston Research Centre for Healthy Ageing (ARCHA). Our work ranges from the molecular and cellular levels, through neural systems and human behavior, to the restoration of health and the study of individuals in health care and societal settings.

Our research groups are as follows:
- Chronic Diseases
- Communicable Diseases
- Molecular and Cell Biology
- Cognitive and Affective Neuroscience
- Neurophysiology and Clinical Neuroimaging
- Sensory and Perceptual Systems
- Health and Lifespan Psychology
- Medicines Research Unit
- Ophthalmic Research Group

BAYERO UNIVERSITY

Social and Behavioural Sciences, Education, Entrepreneurial Studies, Information & Communication Technology, Medical & Pharmaceutical Sciences, Environmental Studies, Agriculture

CHAMPLAIN COLLEGE

Game Design, Emergent Media, Digital film, All areas dealing with media convergence

CQ UNIVERSITY

International Tourism; Labour Force Mobility; Sleep and Shift Work
Civil Engineering, Mechanical Engineering, Electrical Engineering, Engineering Education

CURTIN UNIVERSITY

Financial Accounting, Managerial Accounting, Capital Markets, Corporate Governance, Accounting Education, Auditing

EXCELSIOR COLLEGE

Area of Interest

Yes, In Business, Engineering, and Nursing Degree Programs

McMaster UNIVERSITY

1. Health Information Technologies such as clinical decision support and lifestyle changes self-management software development

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2. Online Educational Software for shared eBusiness/eHealth Informatics Education & Research Opportunities

3. Joint conferences, grants, publishing, as well as visiting research fellows, faculty and graduate students, etc.

MEHMET AKIF ERSOY UNIVERSITY

Education and Training of Teachers, Research in the field of Veterinary Medicine, Mining and Processing Onix, Training Nurses

MEVLANA UNIVERSITY

Medical, Engineering, Health and Business Science

MONTANA STATE UNIVERSITY BILLINGS

Montana State University Billings has an active research culture and would envision collaborations with faculty in the Physical and Biological Sciences, Environmental Studies, Finance, Business Management, Information Systems, Marketing and Health Administration.

NANYANG TECHNOLOGICAL UNIVERSITY

Solar Energy Conversion, Nano – Medicine, Media Technology, Sustainable Development

NATIONAL AVIATION UNIVERSITY

We are interested in technical and aviation directions. As for the research activities conducted the University includes number of scientific and research institutions such as:

Research Institute of Integrated Telecommunication Technologies

SRI of the Fleeting Processes

SRI of Design

State Aviation Scientific Research Institute

Aerodynamic Research Center of National Aviation University of Ukraine

The research design bureau "Buran"

Center "Air traffic service"

Training center (gymnasium)

Among the priority directions of the institutes’ activity are:

- Computer Science,
- ICT,
- Telecommunications

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- Artificial Intelligence
- Microelectronics and Nanotechnologies
- New Material Technologies
- Automatics and Robotics
- Alternative and Renewable Energy Sources
- Energy Saving and Storage
- Environmental Engineering
- Transport, Aviation, Space Research
- Chemistry, Chemical Technology, Functional Materials

NEW MEXICO STATE UNIVERSITY

Research collaboration in Agriculture, Engineering, Arts and Sciences, Business, Health Sciences and Education

NORTH CAROLINA A & T STATE UNIVERSITY


PURDUE UNIVERSITY

Large Scale Data Mining & Visualization (NSF Career work of Dr. Madhavan)
Engineering Education
Personalized Learning (Dr. Madhavan’s career work)

RWTH AACHEN UNIVERSITY

Research activities with regard to sustainability in the field of water, land use, early warning systems, energy and Carbon dioxide sequestration.

SHANGHAI JIAO TONG UNIVERSITY

Research Areas: Computer Graphics, Computer Animation, Image Processing and Digital Media Technology
Image / Video Processing and Analysis System; Animation Design and Rendering System
SINGAPORE MANAGEMENT UNIVERSITY

Accounting
Corporate Governance
Capital Market

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

Interested in Engineering, Education, and Sciences

SULTAN AGUNG ISLAMIC UNIVERSITY

Yes, especially in the field of Law (Cyber Law), IT, Economics and Social Sciences, and Medical

TEL AVIV UNIVERSITY

Engineering / Technology

THE UNIVERSITY OF MONTANA

Yes. Areas of particular interest for Research Collaboration include Business Related Fields, The Biomedical Fields, Pharmacy, Forestry, And other areas.

TUNG WAH COLLEGE

Medical, Nursing, Dental, Veterinary, Forensic, Allied Health (Medical Laboratory, Physiotherapy, Radiography), Chiropractic Studies

UNIVERSITE PARIS-DAUPHINE

Management (Finance; HR; Marketing; Strategy; Accounting), Economics, Law, Political Sciences, Mathematics and Computer Sciences

UNIVERSITY OF CALIFORNIA, SAN DIEGO

Engineering and Information Technology collaborations with IIT schools and other top institutions

UNIVERSITY OF CAPE TOWN

Population Balance Modeling
Indo-Global Education Summit & Expo 2012

Multiphase Flow
Computational Fluid Dynamics
Polymer Reaction Engineering (Ziegler-Natta systems)
Bubble column reactors
Hydrogen Fuel Cells
Industrial process tomography
Tank Bioleaching of Sulphide Minerals
Application of simulations in science and engineering education

The main outcome of my work is simulation software and I’d be very interested in working with Indian Companies to introduce our software as plant operator training simulators or model-based controllers.

Manufacturing and Operational Excellence
Manufacturing Processes
Operations
Laser Applications
Health Care Service Delivery
Complex Systems Failures

UNIVERSITY OF HAWAII

Engineering, Space Science, Natural Sciences, Social Sciences

UNIVERSITY OF IBADAN

University of Ibadan is interested in establishing research collaborations with Indian institutions in the areas of Medicine, Engineering, Earth and Life Sciences, Agriculture, and Business particularly at the postgraduate level. As the largest postgraduate training and research institution, we are interested in research collaborations that impact significantly in the lives of communities in developing countries and as such wish to partner with institutions willing to share experiences and engage in comparative studies.

We are interested in strengthening our institution’s capacity to conduct cutting edge research in the Earth and Life Sciences including Biomedicine and wish to use the opportunity of the summit to partner with relevant research laboratories and explore possibilities of linkages for postgraduate training, fellowships and capacity building. We would also like to collaborate with relevant Indian companies in this regard, particularly those who do business in Africa.

UNIVERSITY OF JOHANNESBURG

We would like to collaborate on various areas of Research undertaken by their university. See www.uj.ac.za

UNIVERSITY OF KWAZULU NATAL

Post Doctoral / Doctorates in Engineering, IT, Sciences and Management Studies.

UNIVERSITY OF MUHAMMADIYAH JAKARTA (UMJ)

1. Women Empowerment
2. Education
3. Social Welfare

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**UNIVERSITY OF NOTTINGHAM**

We are mainly interested in Chemistry, Chemical Biology and Medical related Sciences. We are interested in potentially licensing technology to Indian companies and organizations.

**UNIVERSITY OF ST. ANDREWS**

- Computer Science: including research in Communications, Networking and Sensing, especially Wireless Systems, Mobile Systems, Sensor Networks, “Green” (Energy Efficient) systems, next generation networks, security and privacy, and empirical studies based on measurement. We are particularly interested in working with Indian institutes to discuss strategies for working in remote, rural areas and developing infrastructures in regions with limited infrastructures. Application areas of interest include e-Health, e-Agriculture, remote working. We are also interested in security and privacy, especially for opportunistic and delay-tolerant communication for areas with lack of infrastructure networks.
- Biochemistry/Biomedical sciences- interest in Molecular Mechanisms underlying Rheumatic Fever and rheumatic heart disease, structural basis of host recognition by streptococcal proteins. Looking for collaborations with Indian Research Institutes, Hospitals and Pharma/Biotech Companies. One major goal is to develop a simple diagnostic test for the identification of Rheumatogenic Streptococci strains
- Plant Sciences- research in nitrogen use efficiency and nitrogen assimilation in crops
- Chemistry: chemical biology, research in natural product and diversity-orientated synthesis, chemical genetics
- Chemistry: energy science and engineering, nanomaterials for energy
- Chemistry: interest in area of surface science and molecular electronics
- Mathematics: Pure Mathematics (Algebra, Analysis, Combinatorics); Applied Mathematics (Fluid Mechanics, Solar Theory); Statistics (Ecological Statistics)
- Modern Languages: Arabic, French, German, Italian, Russian, Spanish. Particularly interested in links with Comparative Literature (taught in English translation)
- Social Sciences and Psychology: current projects on ‘participation in collective events’ such as the Magh Mela at Allahabad/Prayag; collaborations on Hindu-Muslim relations and the experience of lower caste members. Keen to maintain and develop this work.

**WEST VIRGINIA UNIVERSITY**


**WESTERN UNIVERSITY OF HEALTH SCIENCES**

Yes, Biomedical Sciences & Pharmaceutical Sciences

**YALOVA UNIVERSITY**

Yes. Social Sciences and Engineering faculty departments have interest to have academic collaborations.