

Research Endeavours

2010-2014



Knowledge
TRAINING
Operations
COMPLIANCE
RESEARCH
SPONSORS
FUNDS
Seminars
DONORS
TRAVEL GRANTS
GRANTS
MONITORING
INITIATIVE
PROJECTS
Workshops
Innovation
ORIC
MANAGEMENT
LEARNING
Office of Sponsored Programmes
Consultancy
Milestones
AGREEMENTS
EVALUATION
Memorandum of Understanding
Commercialization



LUMS

Office of Sponsored Programmes (OSP)

The Office of Sponsored Programmes (OSP) was established on August 16, 2010 and has the responsibility to manage all sponsored research related activities of academic and research units and act as a bridge between LUMS faculty and national/international donors/sponsors. This includes, but is not limited to externally funded research projects; unrestricted grants; travel grants; sponsored conferences / workshops / seminars; consulting services; memorandum of understanding (MoU), Non-disclosure Agreements (NDA); and contracts/agreements related to externally funded projects. The OSP was officially acclaimed as the Office of Research, Innovation and Commercialization (ORIC) by the HEC on December 28, 2011.

OSP OFFICE OF SPONSORED PROGRAMS

Research Innovation Commercialization
ORIC

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Message FROM THE Vice Chancellor



Keeping the LUMS vision alive - “to become an internationally acclaimed research university that serves society through excellence in education and research”, LUMS faculty is actively engaged in research to push the boundaries of knowledge, making new discoveries that continue to provide us new insights and understandings of various disciplines.

Research has played a key role in establishing LUMS as a Centre of excellence. LUMS aims at providing world class research facilities to its faculty and students with advanced libraries, well equipped laboratories and sophisticated information technology support. Brilliant students are at the heart of research activities carried out at LUMS. We are committed to providing exciting opportunities for research not only for our graduate student but also to our undergraduate students.

Research carried out by faculty members at LUMS is both fundamental and applied in nature, with the innovative work having significant potential for income generation as well as creation of intellectual property that has great value in the marketplace. This report presents significant achievements of the LUMS faculty in terms of external grants won, scholarly papers published, research projects, faculty travel grants and consultancy services etc.

LUMS is aiming at becoming a World Class University and for that we will be building on the momentum generated by the ground-breaking research being carried out here that is recognized by peers and continues to attract the most able students. We will continue to focus on producing the best graduates, attracting and retaining the best staff from local and International market, and by attracting postgraduate students locally and from overseas.

Excellence in research is central to the future development of LUMS as a regional center of excellence. We will continue to focus our activities in the direction where our vision is converted into reality.

Prof. Dr. Sohail H. Naqvi
Vice Chancellor



Message FROM THE Director OSP



Since its inception, the Lahore University of Management Sciences (LUMS) has strived for excellence in its pursuit to create and impart knowledge. Research has become an integral part of the university as it has provided a platform for faculty to make new discoveries such as creating new technologies that provide economic benefits to the society, providing health solutions to combat deadly diseases such as hepatitis, introducing management methods to increase efficiency in industries as well as combating issues such as poverty for the betterment of the society and economic welfare of the country.

LUMS aims to establish itself as a centre of excellence where students and faculty members from different schools engage in research for knowledge creation and make ground breaking discoveries that are acknowledged not only in Pakistan but also internationally. The University has been able to establish strong ties at the national as well as the international level with various donor agencies, universities as well as key industries. The Office of Sponsored Program (OSP) established on August 16, 2010 facilitates faculty in seeking and managing their research grants.

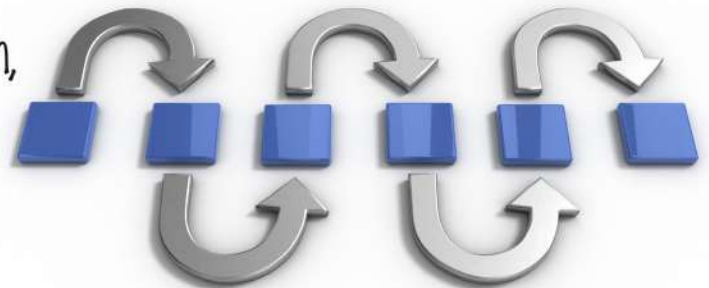
During the four-year period from 2010 to 2014, LUMS faculty members succeeded in winning 80 external grants amounting to PKR 608.61 Million in total, whereas during the same period LUMS provided 180 grants of PKR 74.59 Million. A total of 178 faculty members benefited from these grants. During this period the LUMS faculty produced over 1287 scholarly publications at different national and international venues.

The purpose of this report is to highlight the research activities of LUMS faculty during the last four years that were supported through OSP. It is hoped that this will help the reader to know more about the research at LUMS and will provide an opportunity to expand research collaboration activities.

Dr. Shafay Shamail
Director
Office of Sponsored Programmes (OSP)

We are what we repeatedly do. Excellence, then,
is not an act, but a habit.

~Aristotle





About LUMS

The Lahore University of Management Sciences (LUMS) is a world-class academic institution with a proud history of achievements and ambitious plans for the future. It was granted University Charter in 1985. Starting as one school LUMS has now grown into four schools: Suleman Dawood School of Business (SDSB), Syed Babar Ali School of Science and Engineering (SBASSE), Mushtaq Ahmad Gurmani School of Humanities and Social Sciences (MGSHSS), and Shaikh Ahmad Hassan School of Law (SAHSOL). It offers 15 programs at undergraduate level, 9 at graduate level and 7 at PhD level. LUMS has always endeavoured to provide world class education while encouraging research and intellectual growth. As a result, it has played a key role in setting high standards of academic excellence and producing high calibre professionals.



Schools at LUMS



Launched in 1986, the **Suleman Dawood School of Business (SDSB)** was the pioneer. Its unique teaching pedagogies, such as the case method of teaching, prepare students academically, personally, and professionally for successful careers as managers and entrepreneurs.

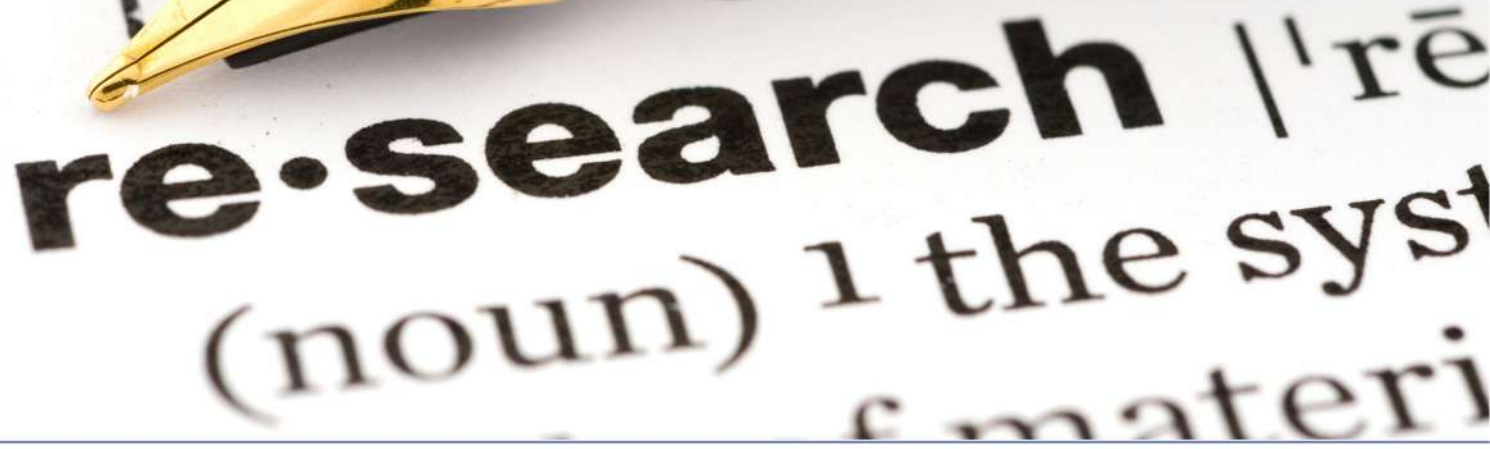
The **Mushtaq Ahmad Gurmani School of Humanities Social Sciences (MGSHSS)** (formerly School of Arts and Sciences) is the largest school at LUMS with a maximum share of the student body. It has made a great contribution towards the country's repertoire of superior multi-disciplinary education in humanities, social sciences and liberal arts.



The **Syed Babar Ali School of Science and Engineering (SBASSE)** is known through its world-class science and engineering students, faculty and high quality, industrially relevant research that catalyze genuine industrial development in the region.

The newest addition to LUMS portfolio is the **Shaikh Ahmad Hassan School Of Law (SAHSOL)** dedicated to imparting a learning environment that will result in world class legal professionals.





re·search

(noun) 1 the syst
materi

Research at LUMS

Research has become an integral part of a University as it involves integration between learning, teaching and knowledge transfer. LUMS has committed itself to conducting and facilitating research activities in all of its Schools, which has led to scholarly discourse and the discovery of knowledge in various fields of academia.

LUMS provides a platform for its faculty and researchers to engage in research that extends beyond the boundaries of the classroom. It provides full support to faculty and research scholars in their pursuit of new knowledge.

Suleman Dawood School of Business (SDSB)

The school is involved in the research areas related to management. There are two centres of research in SDSB namely: **Strategic Sector Research Centre (SSRC)** and **Case Research Centre (CRC)**. SSRC generates scholarship in strategic sectors including development (education management, health management, and entrepreneurship) and economic sectors (energy and water management, agribusiness, textiles, food, banking, sports goods and pharmaceuticals). CRC is involved in the development of well-researched case studies written by the SDSB faculty that are published in an international case research journal "Asian Journal of Management Cases" biannually by the centre. The Case Research Centre has a database of more than 450 cases/industry notes written by the SDSB faculty.

Mushtaq Ahmad Gurmani School of Humanities Social Sciences (MGSHSS)

The school is involved in the research areas related to humanities and social sciences. Within MGSHSS there are two centres: Development Policy Research Centre (DPRC) and Gurmani Centre for Languages and Literature. DPRC provides a research platform for evidence-based policy making and public discussion. Gurmani Centre for Languages and Literature conducts research in the development of languages and their literature through extensive teaching methodologies. The school is actively involved in widespread research carried out in different clusters such as development of Governance and Institutional reforms, culture and heritage policies, politics, environmental issues, poverty, social justice and globalization. Researchers in each cluster analyze questions related to the themes using diverse techniques, which lead to providing solutions to the research questions.

Syed Babar Ali School of Science and Engineering (SBASSE)

The school is involved in the research areas related to life sciences, mathematics, computer science and electrical engineering. The Centre for Advanced Studies in Mathematics (CASM) is a resource centre that is dedicated in conducting research and promoting interaction between mathematicians and experts of other disciplines, such as electrical and computer engineering, economics and social sciences. On the other hand the Centre of High Performance Computing (CHPC) provides scientific computing facilities for the LUMS research community. Research in life sciences is carried out by the respective departments by providing state of the art labs facilities and hands on training in the areas of health, bioinformatics, nano-materials, photonics, and other related disciplines.

Shaikh Ahmad Hassan School Of Law (SAHSOL)

The school is involved in the research areas related to the legal system and provides a research-orientated platform where it can play a productive role in bringing about social change and reform in the legal system.

Centres

Case Research Centre (CRC)

The Case Research Centre (CRC) plays a coordinating and editorial role in the development of well-researched case studies written by the SDSB faculty. It has a collection of over 450 Pakistan specific cases/industry notes drawn from real life issues in organisations experienced first-hand by the faculty as the result of their research or consultation activities. The CRC disseminates the scholarly output of LUMS faculty through its international case research journal "Asian Journal of Management Cases" and also offers the contextually and academically rich teaching material to business schools and the corporate sector worldwide.

Social Enterprise Development Centre (SEDC)

The Social Enterprise Development Centre (SEDC) serves as a scholarship-based research centre working towards the capacity building of the social sector in Pakistan. The centre has successfully developed linkages with more than 500 social sector organisations of Pakistan, which is a unique achievement for any academic institute. SEDC has formed geographic chapters in Lahore, Karachi, Multan, Peshawar, Rawalpindi, Islamabad and Quetta. This national outreach gives it the credibility to undertake operations nationwide. To date, SEDC has published more than 170 case studies and notes written by the LUMS faculty for the social sector. It has also published 6 casebooks on the social sector with several more in process. The centre also assists development professionals to network, collaborate and take on policy initiatives jointly. It offers customised and open-enrolment training programmes for NGOs in various aspects of capacity building.

Strategic Sectors Research Centre (SSRC)

The Strategic Sectors Research Centre (SSRC) is a new initiative in institutionalising research and knowledge generation at SDSB. It focuses on strategic sectors including development (education management, health management, and entrepreneurship) and economic sectors (energy and water management, agribusiness, textiles, food, banking, sports goods and pharmaceuticals).

Rausing Executive Development Centre (REDC)

The Rausing Executive Development Centre (REDC) imparts executive education with the excellence and rigor that is directed at making every executive's experience a valuable one. It is modelled on the structure of some of the leading executive education Centres from around the globe. It offers over 70 programmes every year inclusive of open enrolment and customized programmes backed by in-depth research and a solid grasp on the needs of the modern businesses. In addition, the facilities are also utilized for training and conference purposes by other organisations. Over the years, the REDC has excelled in sustaining partnerships and long term relationships from time to time with leading national and regional organisation on the basis of its commitment to service excellence and dedication to innovative approach to learning.

Development Policy Research Centre (DPRC)

The DPRC is envisaged as a knowledge centre structured around core socioeconomic development themes with the objectives of carrying out cutting edge multi-disciplinary research.

Gurmani Centre for Languages and Literature (GCLL)

The Gurmani Centre for Languages and Literature (GCLL) at the Lahore University of Management Sciences was initiated by the Gurmani Foundation on Friday April 09, 2010, for the advancement of Arabic, Persian, Urdu and other Pakistani languages. The Centre is part of the Department of Humanities and Social Sciences (HSS) and promotes languages and their literatures through teaching, research/publication and its outreach programme.

Centre for High Performance Computing (CHPC)

The Centre for High Performance Computing (CHPC) provides scientific computing facilities for the LUMS research community. The goals of the centre are to engender and facilitate science and engineering research efforts; assist researchers with specialized computational needs and provide research and development exposure to our students.

Centre for Advanced Studies in Mathematics (CASM)

The Centre for Advanced Studies in Mathematics (CASM) is research institutes and runs workshops/ conference and seminars on selected topics in Mathematics with applications every year. It also attracts research scholars from Overseas and Pakistan to interact with faculty.



Institutional Bodies

University Research Council (URC)

The University Research Council (URC) is a standing committee of the University Faculty Council (FC) that promotes and advocates research environment in LUMS. It is involved in developing policies and acting as an advisory group to the Vice Chancellor and Deans in matters related to research. More information can be viewed on the following link:

<http://lums.edu.pk/osp/content/research-council>

Institutional Review Board (IRB)

Institutional Review Board (IRB) is responsible for overseeing all projects that involve the use of human and animal subjects. All issues related to the bio-safety are also under the review of the IRB. More information can be viewed on the following link:

<http://lums.edu.pk/osp/content/institutional-review-board-irb-1383>

Office of Sponsored Programmes (OSP)

The Office of Sponsored Programmes (OSP) focuses solely on sponsored research and programs. It is responsible for managing all sponsored research related activities of academic and research units and act as a bridge between LUMS faculty and national/international donors. This includes, but is not limited to, externally funded research proposals; unrestricted grants; travel grants; sponsored conferences / workshops / seminars; consulting assignments; instructional and service activities; contracts; agreements and arrangements related to sponsored and externally funded activities. Moreover, the OSP has a mandate of managing internal grants (for which funds are provided by LUMS).

Funding at LUMS

The funding at LUMS is categorized into two groups:

External funding, which includes Research Grants, Consultancy Assignments, Travel Grants, and Externally Funded Events.

Internal Funding, which includes Faculty Initiative Funds (FIF), Faculty Travel Grants (FTG) and Faculty Start-up Grants.



Funding at LUMS





Research Grants

As a research university, LUMS is committed to fostering faculty and student research in all its variants and on all its dimensions: from increasing quantum of empirical lab-based research in the sciences, to policy research on the most pressing social and human problems in our society, to theory-building research in all disciplines. Figure 1 shows the number of external grants awarded to faculty during the last four years.

Number of Externally Funded Grants Approved

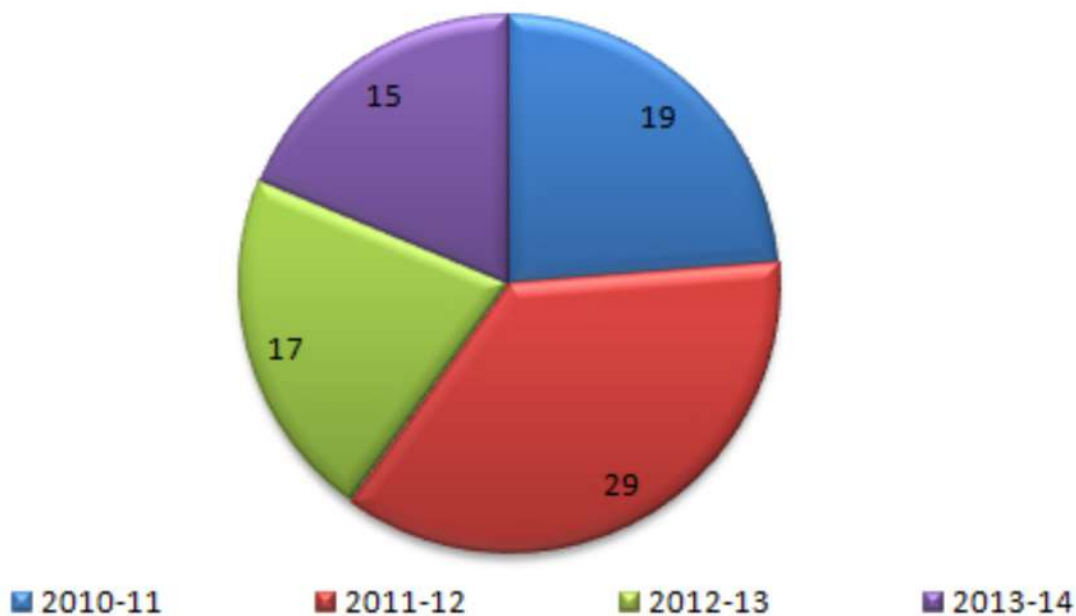


Figure 1



Consultancy

Consultancy involves the purchase of skills and expertise of the University faculty/equipment/facilities by external agencies to work on a specific project. The Figure 2 indicates number of consultancy services provided by LUMS faculty to myriad of academic/industry partners.

Number of Consultancy Services Provided

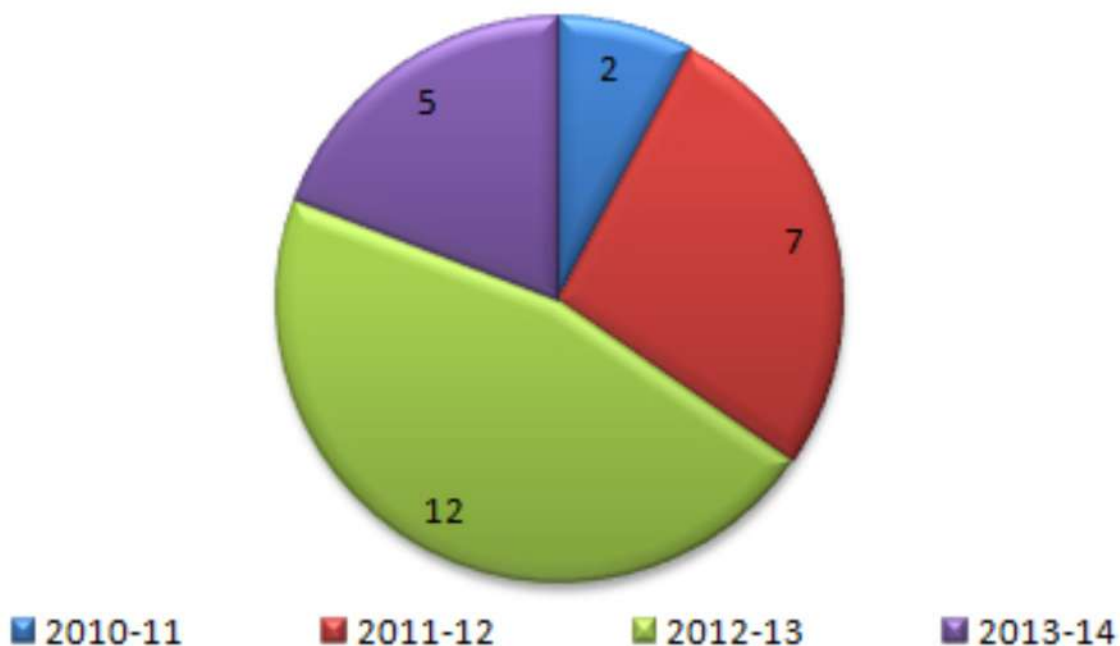


Figure 2



Travel Grants

Scientific seminars, conferences and symposia act as a welcome source of motivation and information for the academic and scientific communities. These events provide tremendous opportunity to exchange the scientific outcomes of knowledge creation and problem solving. Scientific conferences are ideal places to find out what has advanced in a particular field, observe the various debates and controversies under way, meet interesting people, make contacts for the future, and, in general, interact with professionals in their fields.

Number of Externally Funded Travel Grants Approved

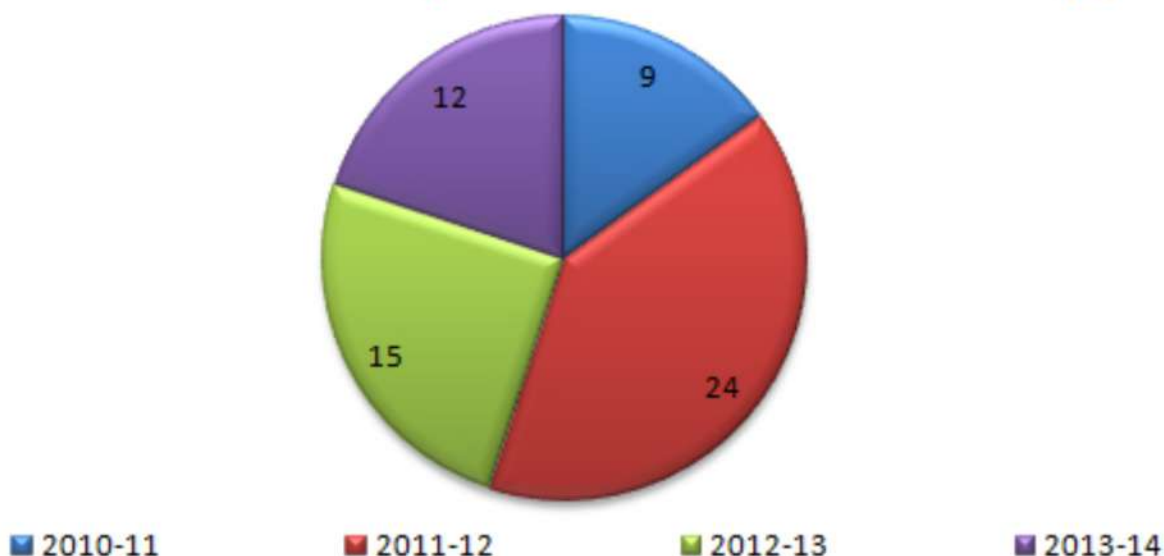


Figure 3



Workshops and Seminars

LUMS is keen to share its academic and research experiences and achievements with academia and industry at national as well as international level through workshops, conferences, seminars, and symposiums. In the last four years, a total of 22 seminars / workshops / conferences were conducted through external funding.

Number of Applications Approved

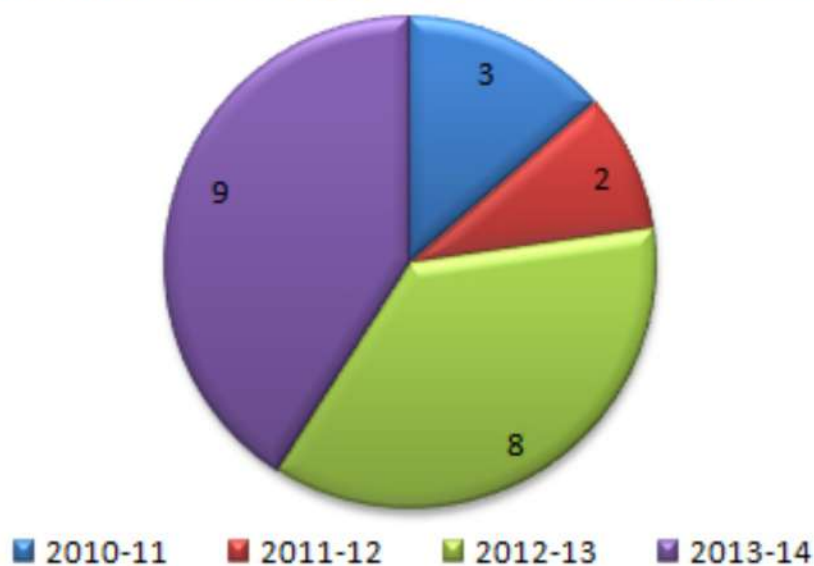


Figure 4



MOU/NDA

LUMS faculty is actively involved in collaborative work that results into Memorandum of Understanding (MOU) and Non-Disclosure Agreements (NDA). These range from exchange programs to research collaborations to provision of resources. In total 37 MOUs and NDA were formalized in the last four years.

Number of MoU/NDA's Signed

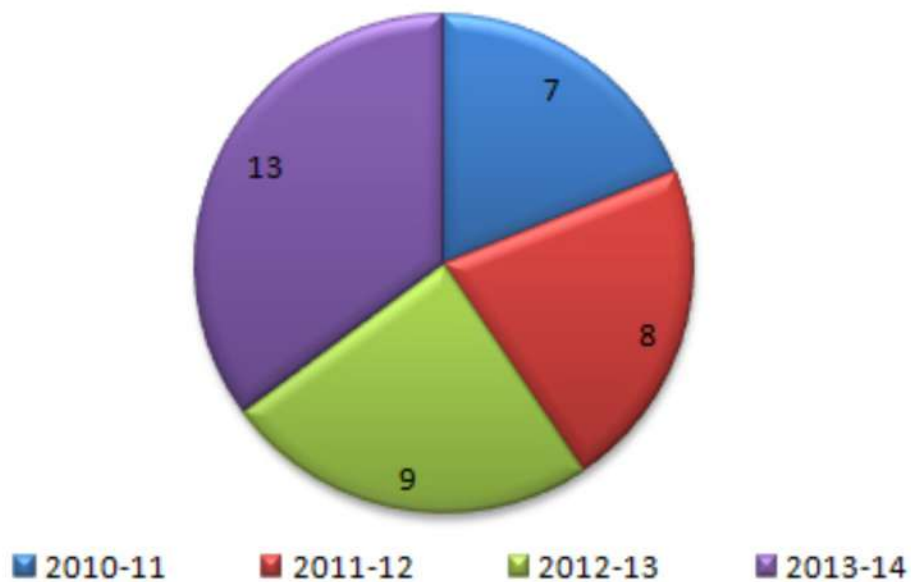


Figure 5

External Funding



Our Donors

LUMS values the continued support of our donors for the promotion of research culture in Pakistan. Figure 6 enlists our leading strategic partners who have been supporting research activities vigorously since last four years. LUMS has completed/executing 85 research programs through HEC funding including travel grant applications. Moreover, Figure 7 indicates the number of projects completed/in execution with our national and international donors.



Figure 6

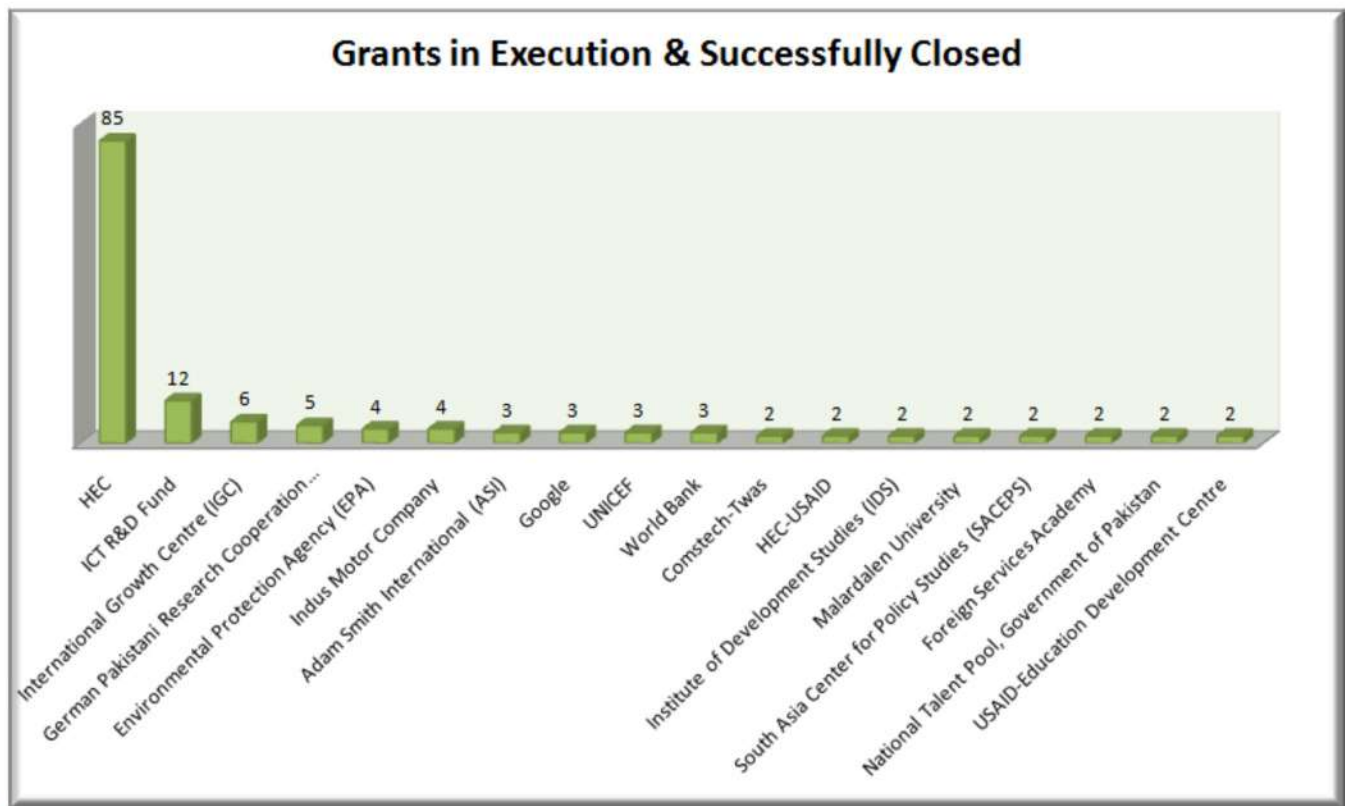


Figure 7



Faculty Initiative Fund (FIF)

The LUMS Faculty Initiative Fund (FIF) is an internal funding mechanism that awards competitive grants up to Rs. 1,000,000 to LUMS faculty. These grants are intended to help faculty member develop innovative projects that might open new research initiatives, external funding opportunities or unusually creative works. Proposals may be submitted individually or by a group of faculty within or across schools to the Office of Sponsored Programs (OSP). In the last four years, LUMS has awarded PKR 48.87 million to 55 faculty members to fund their research projects. Figure 8 gives an overview of the FIF awards granted during the last four years.

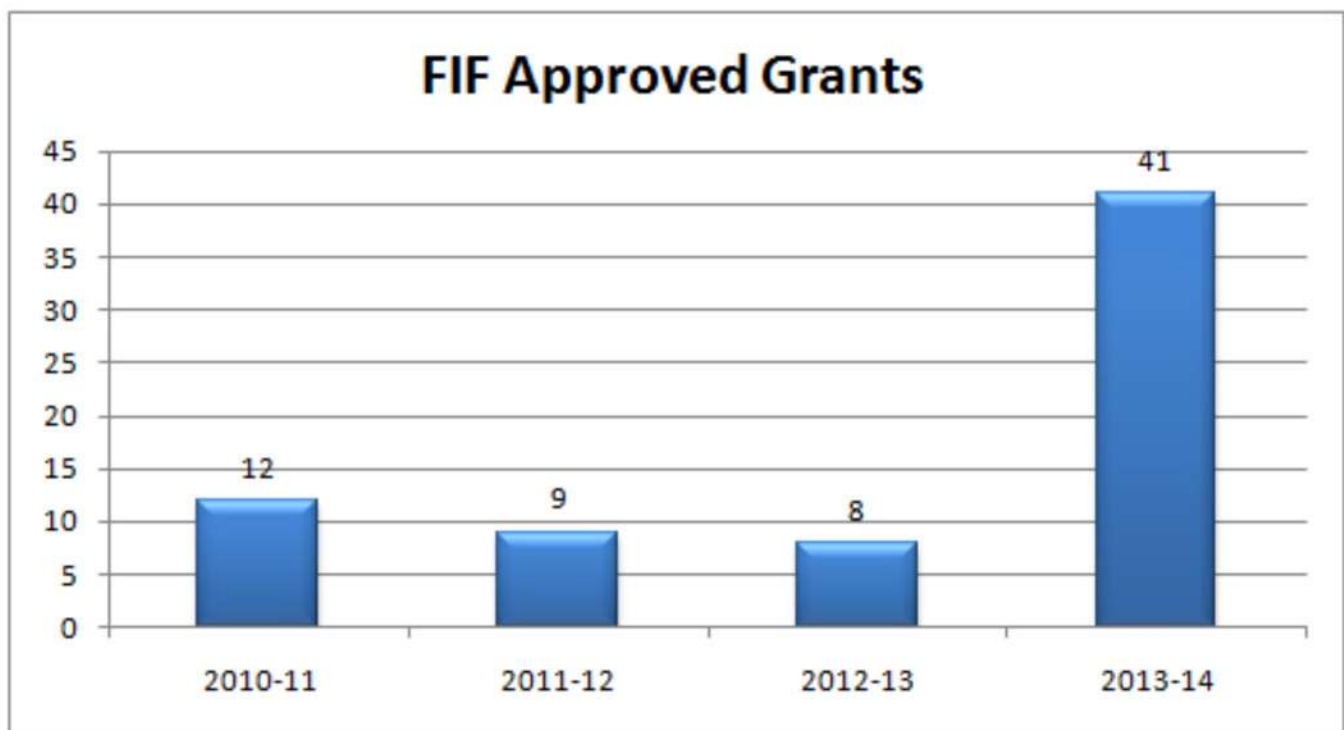


Figure 8



Faculty Travel Grant (FTG)

Faculty Travel Grants (FTG) is another way in which the University invests in the career and research of its full-time regular faculty at various stages of their academic life at LUMS. The purpose of this competitive grant is to encourage research-related international travel and collaborations by full-time LUMS Faculty. Presentation of research by LUMS faculty at leading international academic conferences is particularly encouraged. In the last four years LUMS has awarded a total of PKR 25.71 million to 79 faculty members. Figure 9 shows the FTG awards during the last four years.

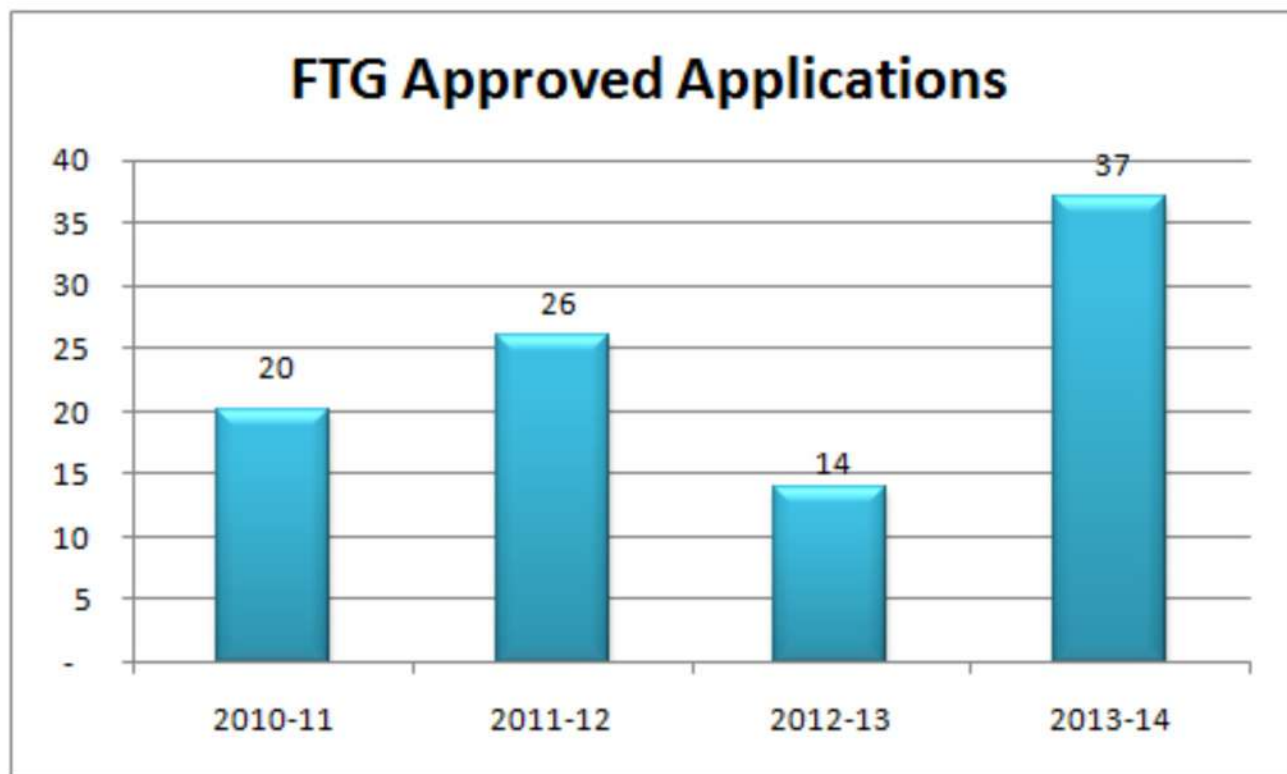


Figure 9



Start-up Grants

Start-up grants are the first grants given to a full-time regular faculty newly recruited on tenure track or as tenured faculty, and are awarded by the Deans of the respective schools. In case the School decides not to award start-up grants to new faculty at the beginning of their stay at the university, the school may institute any scheme for the promotion of research using other funds. During the last four years LUMS has awarded PKR 76.03 million to 109 faculty members to help them establish their research at LUMS.

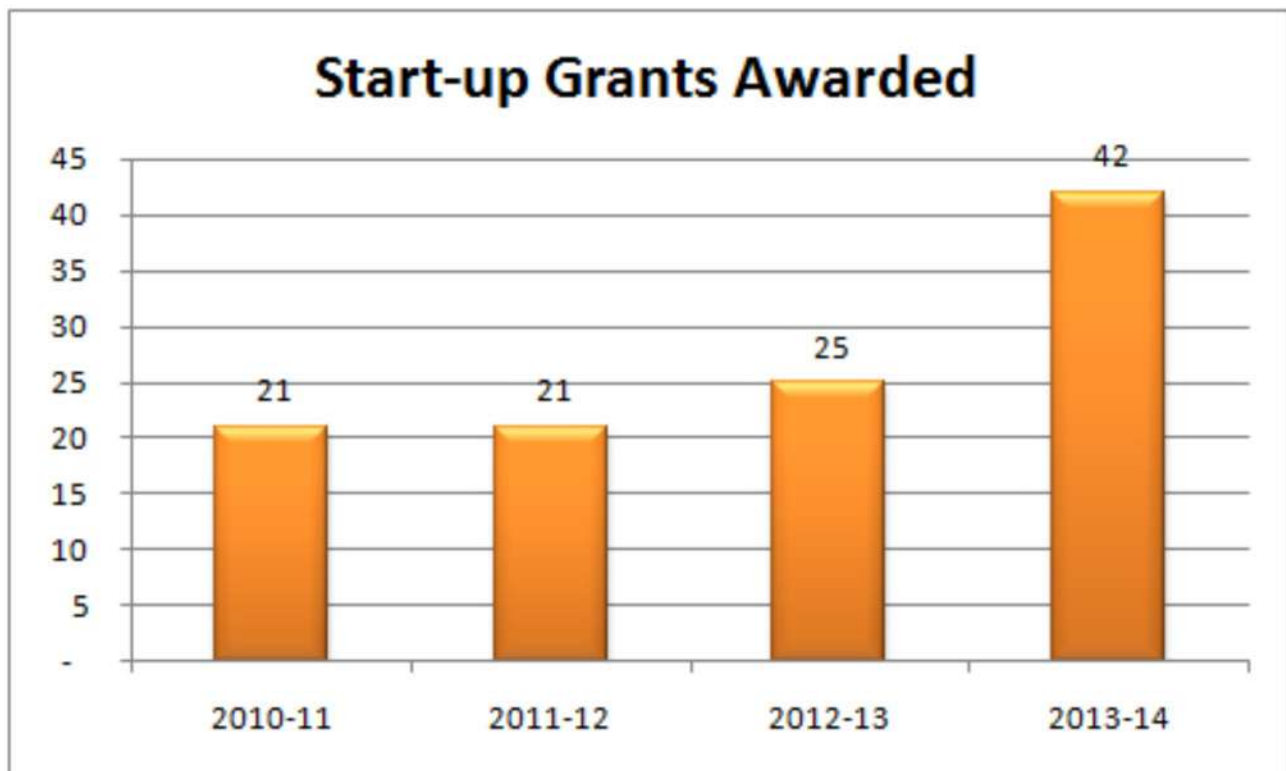


Figure 10

Research Projects

The research activity of the LUMS faculty can be grouped into Health, Technology, Water, Energy, Telecommunication, Economics Development, Business & Innovation and Sciences (Physics, Chemistry and Mathematics). The following section highlights some of the projects of LUMS faculty.



Health

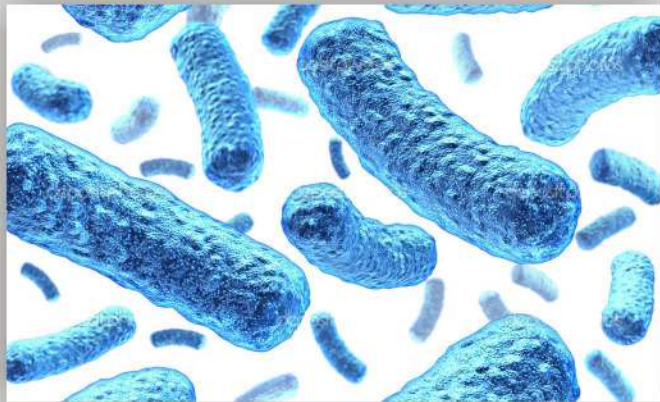


Development of Ultrasensitive, Robust and Affordable Nanoparticle-Based Test Strips for Detecting Bacteria

2013-2017

PI: Dr. Irshad Hussain, Department of Chemistry, SBASSE

Co-PI: Dr. Sohail Qureshi, Department of Biology, SBASSE



The goals of the research are to develop an ultrasensitive, robust and affordable method that can be used for detecting bacteria in drinking water. A key attribute of the programme is the porting of nanotechnology to an inkjet platform, facilitating both small-scale innovation and large-scale manufacturing of these systems. The test strips may be used to rapidly and effectively detect contaminated water and serve as a first step towards preventing outbreak of diseases.



Production of induced pluripotent stem cells from patient biopsies



2013-2014

PI: Dr. Zakir Ullah, Department of Biology, SBASSE

Specific objectives of the project are production of primary fibroblast cells from skin biopsies collected from healthy volunteers and patients; Transformation of fibroblasts with specific transcription factors to produce iPS cells and Characterization of iPS cells by expression of specific markers and characterization of iPS cells by differentiation into other types of cells.



HEALTH

Automatic Detection of Epileptic Events in Clinical Data: A Collaborative Project with Punjab Institute of Mental Health

2013-2014

PI: Dr. Waqas Majeed, Department of Electrical Engineering, SBASSE

Co-PI: Dr. Nadeem Ahmad Khan, Department of Electrical Engineering, SBASSE



The fundamental objective of the proposed research is to combine signal and image processing techniques with pattern classification to develop low-cost and user-friendly tools that could assist the clinicians in detecting epileptogenic events in clinical data. To achieve this objective the project aims to design and implement software for detection of epileptic discharges in electroencephalography (EEG) data.



A Primary Care Toolkit to Tackle Child Labor and Promote Health Equity

2012-2013

PI: Dr. Anne Andermann, Department of Family Medicine, McGill University

Co-PI: Dr. Farooq Naseer, Department of Economics, MGSHTS



The study aims to lay the groundwork for developing a child labour and health equity toolkit to assist community based primary health care workers in low-resource settings in providing education and care for child labourers who are 5 to 17 years of age. In addition, it aims to mobilize larger collective action and social change to promote improved health and safety for children from pre-school to adulthood, and ultimately,

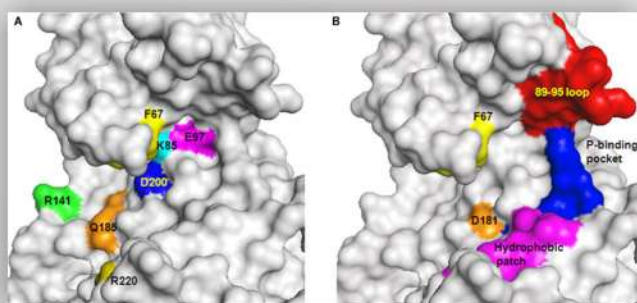
result in reduced health inequities.



Understanding the drug protein interaction-synthesis of new Debromohymenialdisine analog

2012-2012

PI: Dr. Rehman S. Z. Saleem, Department of Chemistry, SBASSE



Debromohymenialdisine (DBH) is a natural product known to inhibit checkpoint kinase 2 (Chk2), which has potential applications in improving the cancer therapy. The new analogue of the natural product will be synthesized and the evaluation of the compounds will help in furthering the understanding of the Chk2-natural product interaction and hence in developing better

inhibitor.



Identification of Therapeutically Important Regions within the NS3 and NS5B Regions of Hepatitis-C Virus (genotype-3)

2011-2012

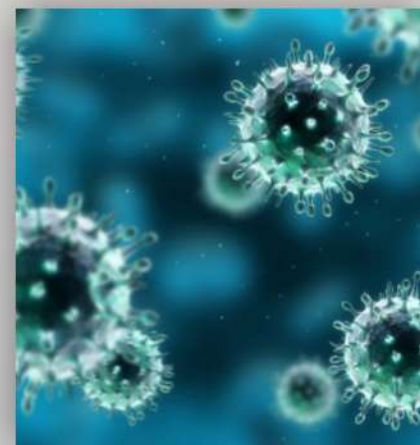
PI: Dr. Kamran Haider, Department of Biology, SBASSE

Co-PI: Dr. Sohail A. Qureshi, Department of Biology, SBASSE



The main objective of this proposal is to understand in detail the molecular basis of why Incivek and Victrelis are more effective against genotype-1 serine protease as compared to genotype-3 which is ubiquitous in Pakistan. Since there are only a limited

number of full-length genotype-3 NS3 and NS5B sequences in the database, sequences of these genomic regions will be obtained from the presently circulating genotype-3 strains within Pakistan. Another major goal of this study is to identify immunodominant regions within the genotype-3 NS3 and NS5B regions.



HEALTH

An Integrated Computational-Experimental Study of Hepatitis-C Virus (Genotype 3a) Sequence Heterogeneity, Protein-Drug Interaction and Immune Responses

2011-2013

PI: Dr. Kamran Haider, Department of Biology, SBASSE

Co-PI: Dr. Sohail Qureshi, Department of Biology, SBASSE



An exploratory research project that aims to comprehensively study the NS3 serine protease from the Hepatitis-C Virus (HCV) genotype-3a circulating in Pakistan from an evolutionary, therapeutic as well as immunological standpoint. The study attempts to understand the genetic heterogeneity, drug interactions and immune response of HCV (genotype-3a) encoded NS3 region in Pakistan at a significantly large scale. The results may potentially be used to develop a combination vaccine against the virus.

Monitoring the Monitors: Using ICT to improve government monitoring in Punjab, Pakistan



2011-2012

PI: Dr. Syed Ali Hasanain, Department of Economics, MGSHSS

The aim of this project is to improve health services in Punjab with the help of Deputy District Officers (DDO's) and Government of Punjab Ministry of Health (MoH). It emphasizes on questions such as: Do monitoring government monitors work using technology such as smart phones? Do intensity of supervision by DDO's lead to better service deliveries? Is the effect sustained for longer periods? Does reduced negligence from supervisory monitoring lead to better outcomes?



Molecular characterization of Drosophila Polycomb protein phosphorylation and sumoylation sites

2010-2012

PI: Dr. Muhammad Tariq, Department of Biology, SBASSE



The project aims to decipher effect of phosphorylation and sumoylation, two post-translational modifications (PTMs) at specific amino acid residues in PC protein. Characterization of these PTMs in the context of PC function will enable to link specific signalling pathway to cell fate maintenance by PC.



Low Cost Ultrasound Training Simulator

2007-2011

PI: Naveed Arshad, Department of Computer Science, SBASSE



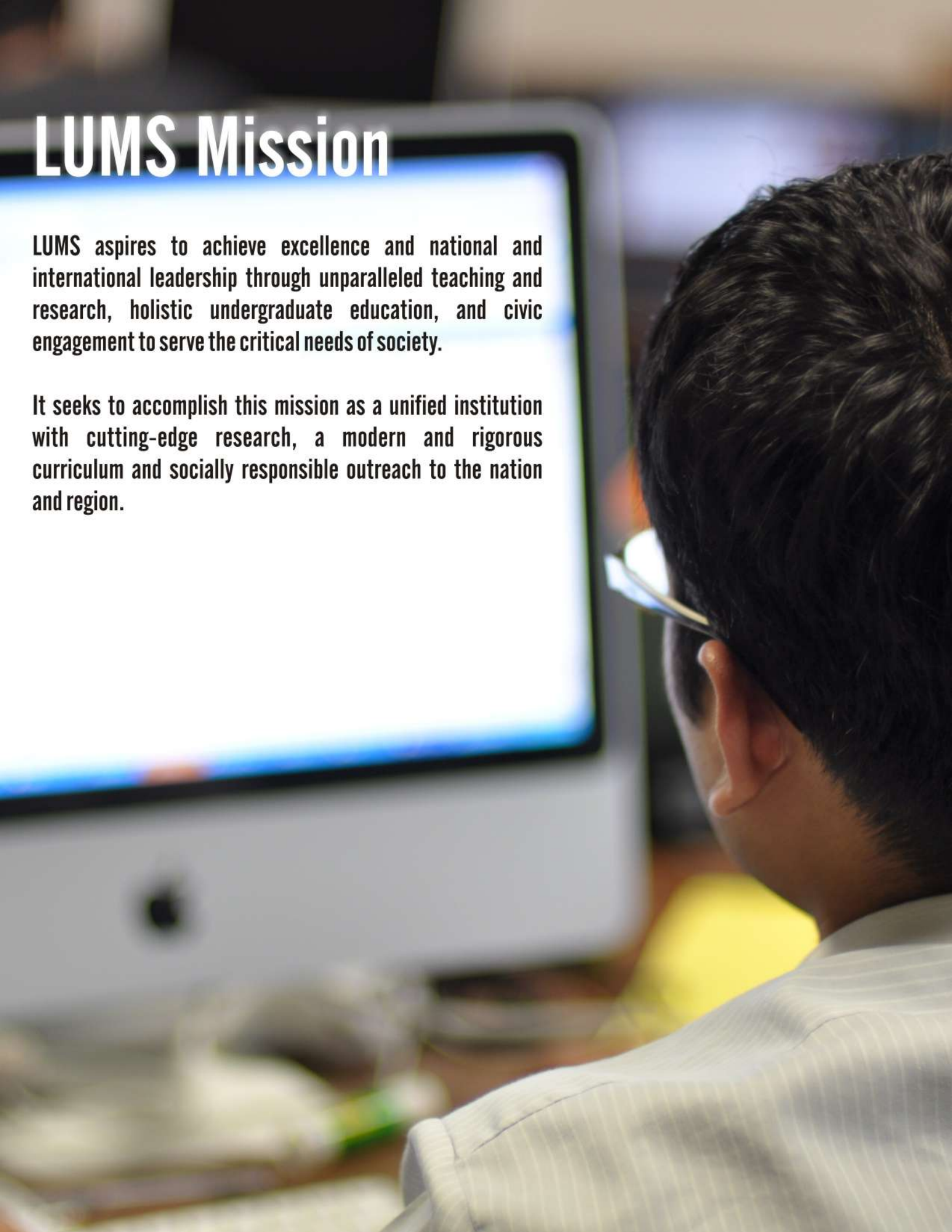
The current ultrasound training strategies for doctors include classroom teaching supplemented by hands-on sessions on normal subjects and patients. The aim of this project is to develop an ultrasound simulator to augment ultrasound training and do away the necessities of hands on sessions with patients.



LUMS Mission

LUMS aspires to achieve excellence and national and international leadership through unparalleled teaching and research, holistic undergraduate education, and civic engagement to serve the critical needs of society.

It seeks to accomplish this mission as a unified institution with cutting-edge research, a modern and rigorous curriculum and socially responsible outreach to the nation and region.



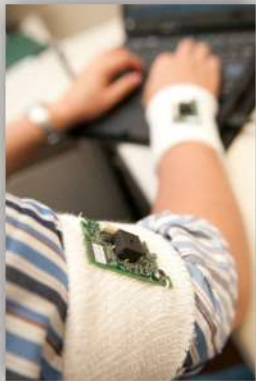
Technology



Design and Development of Wireless Sensor Networks in Industrial Monitoring and Control

2013-2014

PI: Dr. Ijaz Haider Naqvi, Department of Electrical Engineering, SBASSE



This project aims to develop a Wireless Sensor Network in the industry which would monitor the key stress points in the plant. The network of sensor nodes would measure various parameters of plant and the readings of these individual sensor nodes will be communicated to a centralized sink node. The aim is to build the sensor nodes indigenously in order to control the design parameters and tailor them for optimizations suitable for the environment.

Improving Performance of Cloud Data Centres Using Software-defined Networks

2013-2014

PI: Dr. Ihsan Ayyub Qazi, Department of Computer Science, SBASSE

Co-PI: Dr. Daniel Mosse, University of Pittsburgh



The purpose of the proposed research is to explore ways in which Software-Defined Networks (SDN) can help in improving performance of cloud data Centres by changing the way they are managed by transport protocols. The study covers a range of transport protocols and explores how their performance can be improved by centralization of network control by SDN-enabled cloud data Centres. In particular, the focus is on investigating which end-host and network functionality can be centralized for realizing different kinds of transport protocols.

TECHNOLOGY

Control Strategies for Autonomous Off Road Robotics in Agriculture and Demining

2012-2013

PI: Dr. Abubakr Muhammad, Department of Electrical Engineering, SBASSE

Co-PI: Dr. Mian Muhammad Awais, Department of Computer Science, SBASSE

The research aims to develop control strategies for mapping and navigation of an autonomous mobile robot for use in agriculture, demining and similar outdoor

applications using low-cost sensors. The aim is to develop key navigational capabilities related to obstacle detection, terrain classification and path planning, which are required for operation of autonomous outdoor robots in rough terrain.

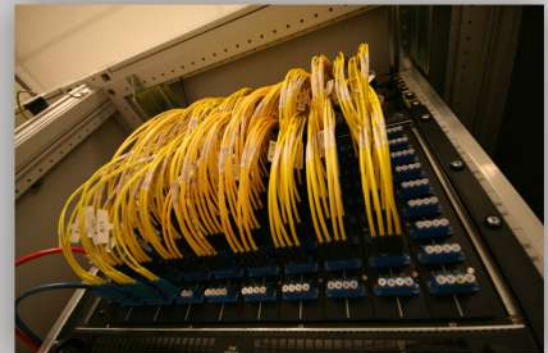


Design, Development and Integration Testing Of FlowIXP An Open Flow based Route Server for Internet Exchange Points (IXPs) based on Marvell xCAT/LION Platform

2011-2013

PI: Dr. Zartash A. Uzmi, Department of Electrical Engineering, SBASSE

The project aims to build a Flow IXP an Open Flow enabled Route server for Internet exchange points. This will allow establishing an IXP without requiring hardware that may be too expensive to deploy. It is intended to use Marvell's Lion/xCAT platforms as the target hardware.



AgriWSN: Wireless Sensor Networks for Agriculture

2011-2012

PI: Dr. Faisal Aslam, Department of Computer Science, SBASSE

Co-PI: Dr. Zartash A. Uzmi, Department of Electrical Engineering, SBASSE

The industrial growth has opened new avenues for the use of embedded systems. The use of Wireless Sensor Networks (WSN's) for monitoring, data collection and

real time decision making is one such avenue. These systems require extensive knowledge and are very expensive limiting the base in third world countries like Pakistan. Hence, this project aims to improve software tools and hardware available in WSN's so that they become cost effective and user friendly.



A Cost-effective EEG based Noninvasive Brain-Computer Interface

2011-2012

PI: Dr. Momin Uppal, Department of Electrical Engineering, SBASSE



The project aims to design and develop cost-effective hardware that acquires electroencephalography (EEG) signals from the scalp through non-invasive methods and transfers them to the computer for analysis. It also aims to develop software capable of analyzing and decoding EEG patterns associated with external stimuli which lead to development of an application that lets a subject operate a PC in real-time using only the EEG signals recorded from the brain.



TECHNOLOGY

LUMS Mine-Detector: An Affordable and Scalable Robotic Swarm for Landmine Detection

2011-2012

PI: Dr. Abubakr Muhammad, Department of Electrical Engineering, SBASSE

Co-PI: Dr. Mian Muhammad Awais, Department of Computer Science, SBASSE



The project was completed with overwhelming success meeting all objectives set at the beginning. Three robotic platforms were built, programmed and tested. The main robot won an international competition in Lebanon (NI Mine Detection Robot Design contest 2011) creating great excitement and goodwill for LUMS and Pakistan.



Smart 3-D Terrain Mapping with Laser Ranging and Agile Optics for Use with Robots

2010-2011

PI: Dr. Mumtaz Sheikh, Department of Physics, SBASSE

Co-PI: Dr. Abubakr Muhammad, Department of Electrical Engineering, SBASSE



This study presents a novel technique for the sampling and reconstruction of Three-Dimensional terrain. A comparison is drawn by simulating and comparing the proposed method with another relatively new technique, which uses Single Pixel LIDAR (Laser Radar) with compressive sensing to reconstruct 3-d objects.



Water



Assessing options for effective water governance in Pakistan's IBIS (WatGov)

2013-2014

PI: Dr. Abubakr Muhammad, Department of Electrical Engineering, SBASSE



The study aims to answer two questions: How do farmers behave in the presence of full information on discharges and seasonal cumulative flow? And how accurately can experimental games predict actual behaviour? The study covers two distinct sites in Pakistan: one with high salinity ground water and one with low salinity ground water.



Development of polymer functionalized nanoparticles based adsorbents for high capacity and efficient removal of hazardous metal ions from contaminated water

2011-2012

PI: Dr. Basit Yameen, Department of Chemistry, SBASSE



In Pakistan water contamination is a grave concern that has caused severe problems such as health issues, crops productivity of soil, livestock reserves/production and the country's economy. This project aims to develop a novel adsorbent system that acts as remediation treatment to maintain the quality of water by removal of hazardous metal ions and hence avoid the contamination and its effects on the country's environment.



WATER

Revitalizing Irrigation in Pakistan

2010-2014

PI: Dr. Abubakr Muhammad, Department of Electrical Engineering, SBASSE



The project aims to contribute to agricultural development in Pakistan through the efficient management of surface water and the sustainable use of groundwater in selected canals within the Indus Basin Irrigation System to enhance food security, reduce poverty, and adapt to uncertainties brought about by climate change.



A combination of magnetic nanoparticles and polymer brushes: Towards development of magnetically assisted, high capacity and efficient metal ion contaminated water remediation adsorbent

2012-2013

PI: Dr. Basit Yameen, Department of Chemistry, SBASSE



The project concerns the development of a method for removal of inorganic pollutants represented by metal ions. Specifically it is intended to develop an efficient magnetic nanoparticles based metal-ion-adsorbent with relatively higher ion up-taking capacity.



Energy



Study on Integration of Renewable and Energy Optimization Solutions in Local Industry

2012-2012

PI: Nauman Ahmad Zaffar, Department of Electrical Engineering, SBASSE



The objective of this project is to perform a detailed study on PV backup systems based on various components such as solar panels, charge controllers, storage system and invertors. A PV system capacity is carefully analyzed on the balance between solar energy striking on the modules, electrical load requirements and efficiencies of PV system components. Several performance parameters are taken into account for detailed study to evaluate the overall yield of



the PV system.

Towards Self-Managing Energy Systems in Buildings

2011-2013

PI: Dr. Naveed Arshad, Department of Computer Science, SBASSE

PI: Dr. Jahangir Ikram, Department of Electrical Engineering, SBASSE



The aim of the project is to investigate energy efficiency and renewable energy integration in the existing electricity systems of common buildings such as houses or office. In order to conserve energy, the energy supply and usage in buildings must be treated as a self-managing system. The Specific goal is to develop low cost solutions for energy efficiency and maximal utilization of renewable energy through hardware/software interfaces.



ENERGY



Synthesis and Properties of Thermoelectric Oxides for Renewable Energy Conversion Technologies

2011-2014

PI: Dr. Falak Sher, Department of Chemistry, SBASSE



There is a renewed interest in investigation of thermoelectric materials due to their ability to convert heat gradient into electricity and vice versa. This project proposes to investigate new compositions of transition metal oxides in a search for better thermoelectric materials. It also expects to gain deeper insight and understanding of the underlying principles of thermoelectric properties in these functional materials.



LUMS Smart Meters and Meter Data Management PoC - Extension

2011-2013

PI: Nauman Ahmad Zaffar, Department of Electrical Engineering, SBASSE



“Smart Meter” is an advanced meter (usually an electrical meter) that records consumption in intervals of an hour or less and communicates that information at least daily via some communications network back to the utility for monitoring and billing purposes. This research serves as the basis to outline enhancements for rolling-out a proof of concept project to setup a smart metering infrastructure at LUMS for carrying out a study

of operational control and benefits of Advanced Metering Infrastructure.



Telecommunication

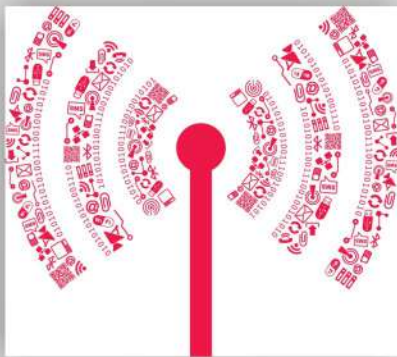


TELECOMMUNICATION

Design and Implementation of an Experimental Platform for Cooperative Cognitive Communication Networks

2013-2015

PI: Dr. Momin Uppal, Department of Electrical Engineering, SBASSE



The objective of this project is to perform a detailed study on PV backup systems based on various components such as solar panels, charge controllers, storage system and inverters. A PV system capacity is carefully analyzed on the balance between solar energy striking on the modules, electrical load requirements and efficiencies of PV system components. Several performance parameters are taken into account for detailed study to evaluate the overall yield of the PV system.

Intelligent Fault and Performance Management in Telecommunication Networks

2013-2014

PI: Dr. Mian Muhammad Awais, Department of Computer Science, SBASSE



telecommunication network management domain.

The proposed project is aimed at developing a low-cost intelligent solution to manage network faults and performance degradation emanating from telecommunication networks. The conducted research would culminate in an intelligent network management system, which would help in understanding issues relating to the suitable adoption of artificial intelligence techniques in the



TELECOMMUNICATION

Long Distance WiFi links for Connectivity in Rural Areas

2013-2013

PI: Dr. Ihsan Ayyub Qazi, Department of Computer Science, SBASSE



Today many rural areas in Pakistan do not have good data communications infrastructure. All modern connectivity solutions have primarily been designed with the intent of serving the urban populations with high user density.

Although GSM networks today are very wide spread, they are not very effective at providing data connectivity. Long distance WiFi links are a low cost solution for connectivity in rural areas. The ease of deployment and the low cost of long distance WiFi links make it a

viable option for a system that provides connectivity to rural areas. The intent is to provide E-services for health, education etc. For example remote clinics can be set up where the doctor is able to communicate with the patient. Educational application could provide the users with access to classes recorded for them and then sent over the link and cached at the other end for the users to view them. Furthermore the link could be used to set up an intranet and even provide internet connectivity in the rural areas.



Intelligent Routing in Inter-Carrier (Class 4) Operation Support Systems (OSS)

2013-2015

PI: Dr. Zartash A. Uzmi, Department of Electrical Engineering, SBASSE



The research aims to build an Intelligent Routing Module (IRM) that will enable operators to minimize revenue leaks due to routing errors or less than optimized routing. The IRM shall act as the decision support system for routing in real-time, thus ensuring revenue and profit maximization, premium call quality and high availability on the system, which are essential ingredients of doing successful long distance

communication business.



Economic Development



ECONOMIC DEVELOPMENT



The Interaction of Law and Economic Growth Phase 1: Labour Laws in Sheikhupura

2013-2014

PI: Dr. Anjum Altaf, Department of Economics, MGSHSS



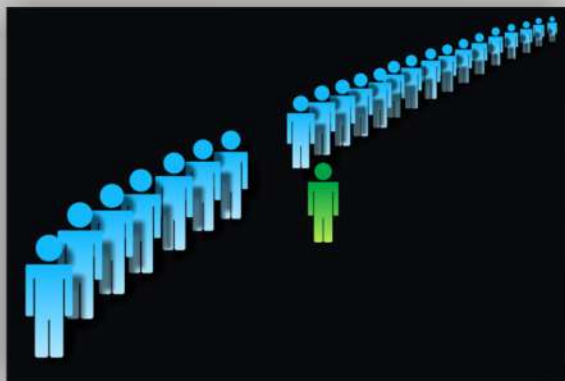
The project aims to understand the function of labour law that is critical for productivity with a focus on Sheikhupura. It involves conducting focus groups, data asset management, conducting qualitative and quantitative analysis of case law pertaining to labour disputes in the region, in hopes of reaching conclusions that can eventually inform labour law and policy. One of the key tasks is to assess which particular laws are critical to labour productivity.

Do Migrants Bring Their Castes with Them: Identity and Occupational Mobility in Lahore

2013-2014

PI: Dr. Rashid Memon, Department of Economics, MGSHSS

Co-PI: Dr. Hadia Majid, Department of Economics, MGSHSS



This project examines the occupational mobility of migrants living in Lahore. Poor Pakistanis view migration as an instrument of poverty alleviation and economic mobility. In particular, low-caste workers are thought to escape rural caste-based marginalization by moving to the anonymity of urban markets where the expectation is that migrants of different identities eventually meld into a homogenous urban population. The project seeks to test this expectation by studying the occupational

outcomes of migrants and their children to identify the extent of socio-economic mobility.

ECONOMIC DEVELOPMENT



Metropolitan Lahore - Economic Geography, Labour Markets and Growth

2013-2014

PI: Dr. Anjum Altaf, Department of Economics, MGSHSS



This project explores various dimensions of the size of the labour market in Lahore and its surrounding region. The research findings are expected to influence policies intended to increase economic growth, in particular, by raising worker productivity via the increased size of labour markets. In addition, the findings would yield clear targets for cost-effective transport infrastructure investments that would be amenable to monitoring over time.

Cultural Frames for Negotiation

2013-2014

PI: Dr. Samina Quratulain, SDSB

Co-PI: Dr. Abdul Karim, SDSB



The research addresses cultural differences by exploring the role of relationship domains and negotiation frames of members of an individualist culture, Canada, and a collectivist culture, Pakistan, in determining negotiation behaviour, preference for outcomes and performance. Specifically, this research explores the question of whether and under what

circumstances will members of a collectivist cultures negotiate more competitively, prefer to maximize own and even minimize others' gains, and achieve lower joint gains than members of an individualist culture.

ECONOMIC DEVELOPMENT



Labour Market Participation Decisions in Pakistan-A Gender Perspective

2013-2014

PI: Dr. Misbah Tanveer, SDSB

Co-PI: Dr. Enrico Marelli, University of Brescia, Italy



The objective of this proposed project is to analyze the factor affecting the labour market participation decision for women in Pakistan. To achieve Millennium Development Goal (MDG) there is need to understand the current situation prevailing in the labour markets and highlight the potential socio and economic factors which can help to realize this goal.



Out of School Children

2012-2013

PI: Mr. Usman Khan, Department of Economics, MGSHSS



The purpose of the research is to improve statistical information and analysis on out of school children and to scrutinize factors leading to exclusion from schooling, and existing policies related to enhanced participation (addressing the data, analysis and policy gaps). The goal is to introduce a more systematic approach to address the problem of out-of-school children and guide concrete education sector reforms in this regard.



ECONOMIC DEVELOPMENT



Strengthening Research and Promoting Multi-level Dialogue for Trade Normalization between India and Pakistan

2012-2013

PI: Dr. S. M. Turab Hussain, Department of Economics, MGSHSS



The objective of this project is to better inform key stakeholders in business and policy establishment through targeted research and to make India-Pakistan trade normalisation policy process more participatory through creation of multilevel dialogue platforms for interface between policy makers, business persons and academics. The endeavour hopes to catalyze and inform a more participatory policy debate through targeted and practical research and by fostering multi-level dialogue platforms.



Industrial Policy Implementation Mechanism

2010-2011

PI: Dr. Abid A. Burki, Department of Economics, MGSHSS

Co-PI: Dr. Kamal A Munir, SDSB



This project is a continuation of the earlier project also funded by the World Bank on "Industrial Policy, its Spatial Aspects and Cluster Development in Pakistan." The project envisages preparation of action plans based on the recommendations of the industrial policy and to describe the mechanism for implementation and monitoring and the measures and structures needed to perform these activities.



ECONOMIC DEVELOPMENT



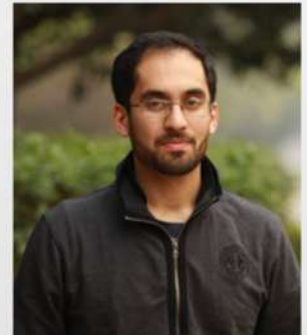
Supporting Policy Research to Inform Agricultural Policy in Sub-Saharan Africa and South Asia

2011-2013

PI: Dr. Syed Ali Hasanain, Department of Economics, MGSHSS



The study attempts to analyze various research questions about water management in different countries. The questions include how have different countries responded to challenges of water management? What are the obstacles to private and public irrigation development? How does the pricing of water affect the efficiency of use? What have been the impacts of the water markets on agricultural production? And what have been the distributional consequences?



Pakistan's Disputed Destiny: Modernism, State and Challenge of Radical Islam

2012-2013

PI: Dr. Rasul Baksh Rais, Department of Humanities and Social Sciences, MGSHSS



The project aims to analyze various resources such as constituent assembly debates, papers of the founder fathers, their speeches and statements, to understand their vision of Pakistan. The research involves interviewing a wide range of thinking politicians, ethnic nationalists, religious leaders

and public intellectuals in four provinces and Gilgit-Baltistan to analyze why the original idea of Pakistan as a modern, nation state has become contested.



ECONOMIC DEVELOPMENT



Agglomeration Economies and their Effects on Productivity and Efficiency of Manufacturing Firms: Evidence from Pakistan

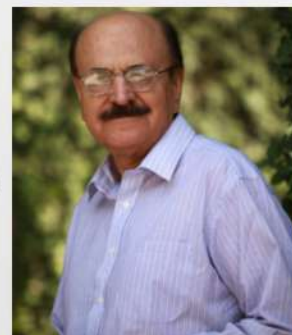
2011-2012

PI: Dr. Abid A. Burki, Department of Economics, MGSHSS

Co-PI: Dr. Mushtaq A Khan, Department of Economics, MGSHSS



This project aims at identifying the variables that affect the productivity and efficiency of manufacturing firms in Pakistan in an agglomeration economy. The project provides a spatial mapping of firms identifying the nature and extent of geographic concentration, and discusses their dynamic process overtime. It employs econometric methods on firms and spatial data to examine the impact of agglomeration economies on productivity and efficiency.



Association of Small Cities

2012-2012

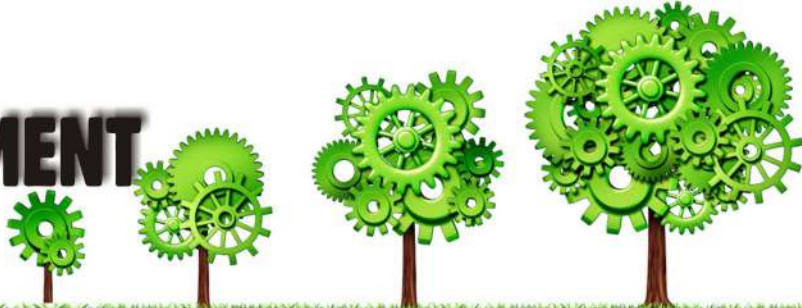
PI: Dr. Anjum Altaf, Department of Economics, MGSHSS



The current system of political representation in Pakistan often, does not overlap with representation and articulation of the interests of small cities. In cases where the major part of a constituency is a city itself, the said problem does not arise since the city as an entity stands well represented. However, such is not the case for small cities and a development framework is required that integrates small towns as focal point. The project aims to test one such system of city-level representation that represents the interests of small cities.



ECONOMIC DEVELOPMENT



Situation Analysis of Children and Women in Pakistan

2011-2012

PI: Mr. Usman Khan, Department of Economics, MGSHSS

Co-PI: Dr. Abid A. Burki, Department of Economics, MGSHSS



The aim of this project is to generate evidence as to which of the rights of the children and women are unfulfilled and how? It also includes determining what the causes of the un-fulfilment are as well as whose rights are unfulfilled etc. The purpose is to assess and analyze the situation of the country with respect to the fulfilment/un-fulfilment of the rights of women and children.



Common Interests and a Common Future: Exploring India-Pakistan Partnership- An India-Pakistan Dialogue

2013-2013

PI: Dr. Anjum Altaf, Department of Economics, MGSHSS



The project brings together educationists, environmental experts and professionals, and draws from their experience and expertise to evolve new ideas and recommendations on the policy front. It brought together 32 experts from Lahore, Karachi, Mumbai and Amritsar three times over the course of the last year and resulted in the signing of 2 MoUs between the countries pertaining to the development of a curriculum conducive to ideals of responsible citizenship and environmental sustainability as well as the formation of the 'Ravi Cultural Corridor' which shall serve as a platform for exchange of ideas, as well as people in the near future. This project is replicable on a larger scale that can involve wider institutional collaborations between India and Pakistan.



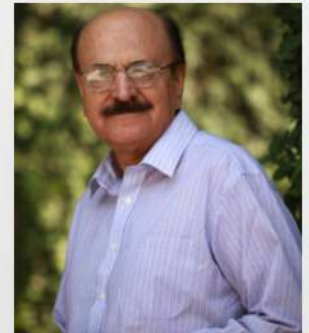
ECONOMIC DEVELOPMENT



Exploring the Link between Polarization and Poverty: Empirical Evidence from Pakistan

2010-2011

PI: Dr. Abid A. Burki, Department of Economics, MGSHSS



The proposed study assesses the sensitivity of measures of inequality and polarization with poverty incidence in Pakistan. It uses a linear probability model on pooled cross-section data of 113,240 households drawn from eight rounds of household surveys (HIES) over the 1990-01 to 2005-06 periods at the individual and household-levels to explore the sensitivity of incidence of headcount poverty with different measures of polarization and income inequality to given levels of income growth.

Promoting Indo-Pak Trade

2013-2014

PI: Mr. Usman Khan, Department of Economics, MGSHSS

Co-PI: Dr. S. M. Turab Hussain, Department of Economics, MGSHSS



The project aims to increase awareness of the benefits of trade between India and Pakistan among public and private stakeholders for further support for greater cooperation and dialogue between government, public and private sector bilateral trade liberalization. The project also aims to improve the readiness and capacity of the state to

engage in bilateral trade with India.

Business & Innovation





Internationalization of Manufacturing - The State of Pakistani Firms

2013-2014

PI: Dr. Kamran Ali Chatha, SDSB



Increased globalization of manufacturing indicated by off shoring of manufacturing and innovation to 'low cost' countries has shown increased production activity in the developing countries. Accordingly, the manufacturing capabilities and innovation potential in developing countries has improved. The purpose of this project is to assess readiness of manufacturing firms in developing countries like Pakistan to internationalize their manufacturing and innovation capabilities and the strategies deployed for this purpose.

Impact of Access to Finance on the Growth of SME's in Pakistan

2013-2014

PI: Dr. Salman Khan, SDSB



The research project aims to find the impact of the lending behaviour (of financial institutions) on the growth of Small and Medium Enterprises (SMEs) in Pakistan. The research explores the magnitude of loss in growth attributable to lack of access to finance/credit over the period of time especially during the financial crisis.



Sovereign Ratings Changes and KSE Sentiment

2013-2014

PI: Dr. Ch Tanveer Shehzad, SDSB



The objective of this proposed project to analyze the effect of sovereign ratings changes on Karachi Stock Exchange (KSE) Movements. Specifically it looks how sovereign rating (and outlook) changes of Pakistan affect the investor's sentiment in KSE.



The Implications of Thinking by Analogy for Financial Markets

2013-2014

PI: Dr. Hammad Siddiqi, Department of Economics, MGSHSS

Co-PI: Dr. Syed Zahid Ali, Department of Economics, MGSHSS



The purpose of the project is to do an empirical test on the following hypothesis: Higher the proportion of systematic risk in the total risk of the underlying stock, higher is the level and the slope of the corresponding option implied volatility curve.



BUSINESS & INNOVATION



Cultural influences on the effectiveness of organisational leadership: A study of Pakistan

2011-2012

PI: Dr. Ghufran Ahmad, SDSB



The project aims at determining the differences in leadership styles and requirements and characteristics of organisational culture in Pakistani organisations operating in four different sectors including for-profit private sector, public sector, non-profit social sector, and military. The project further aims to identify the



within sector differences in leadership and culture. The objective is to develop models that describe and explain the interrelationships between leadership styles and requirements and organisational culture characteristics.

Understanding Technology Based Innovation Ecosystem of Pakistan and Impact of Innovation on Performance of Pakistani Organisations

2011-2012

PI: Dr. Syed Zahoor Hassan, SDSB

Co-PI: Dr. Kamran Ali Chatha, SDSB



The project aims to understand: a) Technology based innovation ecosystems in various industrial sectors of Pakistan. b) Capture examples of technology based innovations in those industrial sectors and disseminate them for the benefit of other businesses. c) To understand linkages between buyer-supplier relationship of organisations and innovations in their product/services in the context of emerging markets.





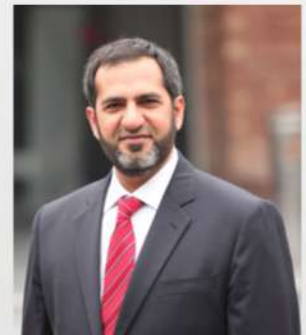
An Analysis and Design of Dairy Sector Supply Chain in Pakistan

2011-2012

PI: Dr. Kamran Ali Chatha, SDSB



This project makes use of value chain analysis techniques for evaluating dairy sector value chain in Pakistan and access the extent of benefits achieved by structural interventions (e. g. establishment of large farms, veterinary clinics, etc.) made in the sector. Hence it provides evidence based policy advice for future structural development to uplift the sector. Secondly, it accesses the comprehensiveness of the value chain analysis techniques to evaluate chilled value chain of a perishable product (milk) in an emerging economy (Pakistan) and develop the value chain analysis suite to incorporate sector structural analysis.

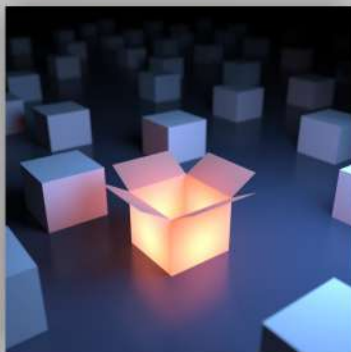


Atlas of Islamic World Science and Innovation Project: Pakistan case study

2010-2010

PI: Dr. Syed Zahoor Hassan, SDSB

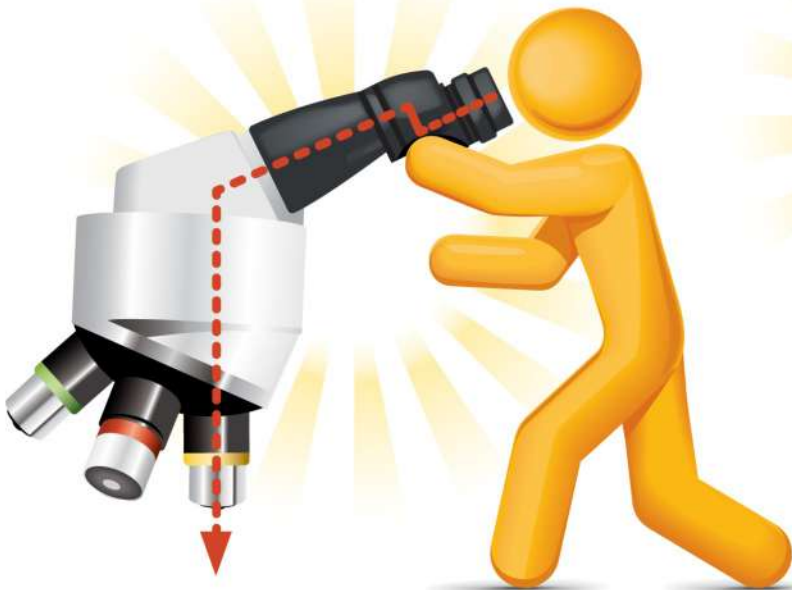
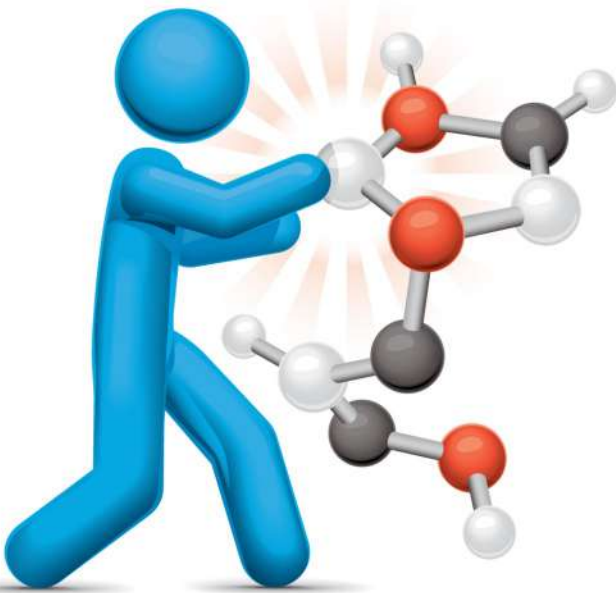
Co-PI: Dr. Kamran Ali Chatha, SDSB



The purpose of this project is to provide a platform for various stakeholders to speak about science & technology based innovation, share their experiences, learn from each other, and thus contribute to the development of human capital, sustainable business development and a culture of science and technology based innovation in Pakistan. Public organisations, commercial entities as well as social and not-for-profit sector organisations were included in the scope of interactions and data collection.



Sciences



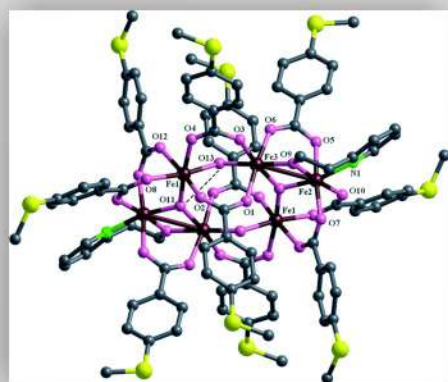
CHEMISTRY



Design and Synthesis of Novel Functionalized Polycyclic Aromatics for Potential Applications in Organic Electronics

2013-14

PI: Dr. Ghayoor Abbas Chotana, Department of Chemistry, SBASSE



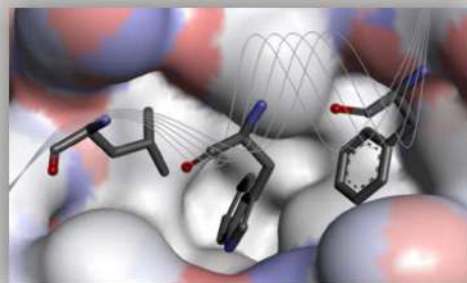
The aim of this project is to design and synthesize novel aromatic building blocks which are highly sought in the fields of optical/electronic organic materials and organic polymers. Specifically new structural patterns of fused polycyclic aromatics such as naphthalene, anthracene, pyrene and perylene will be synthesized and completely characterized. The project is based upon Green Chemistry synthetic technology.



Synthesis of new aromatically decorated chemotype targeting MDM2-p53 interaction, with potential applications in cancer treatment

2013-2014

PI: Dr. Rehman Shah Zaib Saleem, Department of Chemistry, SBASSE



The effectiveness of chemotherapeutic technique, to treat cancer, lies in its ability to damage the DNA of cancer cells. The project is interested in developing a programme to unearth new chemotypes of inhibitors that will conform to drug-like properties and show good inhibitory activities of this protein-protein interaction. The specific aims of this project are to develop and optimize the synthetic route, synthesize the combinatorial library and characterize all the

compounds for their chemical structure.



CHEMISTRY



Development of protogenic groups containing polymer brush modified additives to improve the proton conductivity of polyelectrolyte membranes for fuel cell application

2012-2013

PI: Dr. Basit Yameen, Department of Chemistry, SBASSE

Co-PI: Dr. Sabieh Anwar, Department of Physics, SBASSE



The proton conductivity of a PEM is a very important factor in determining the overall efficiency of a fuel cell and its current status is still far from making any revolutionary real life impact. The objective of this proposal is to develop proof of concept realization of novel unexplored polymer-brush/oxide-additives based strategies for improving the proton conducting characteristic of existing PEM like Nafion for fuel cell applications.



Bio-imaging and Catalysis with Metal Nano clusters

2011-2013

PI: Dr. Irshad Hussain, Department of Chemistry, SBASSE



The objectives of the study are to develop highly fluorescent metal nanoclusters, functionalization and purification of metal nano-clusters and to explore applications in bio-imaging, drug delivery, and electro catalytic applications. The proposed project has enormous applications in bio-imaging and has great potential to develop highly efficient catalysts for a variety of processes, especially electro catalytic oxidation of methanol for fuel cell applications.



S-Duality, $N=2^*$ Gauge Theories and Topological Strings

2012-2016

PI: Dr. Amir Iqbal, Department of Physics, SBASSE

Co-PI: Dr. Irfan Chaudhry, Department of Physics, SBASSE



The objectives of the research are to a) Calculate the partition function of $N=2^*$ theory using topological vertex formalism. b) Expand the partition function in terms of the mass parameter m and expressing the coefficients in terms of modular forms thus making S-duality manifest. c) Realizing the S-duality in terms of the geometry of the Calabi-Yau threefold X . d) Obtaining the product representation of the partition function and understanding it in the context of Borcherd's lift of modular forms.

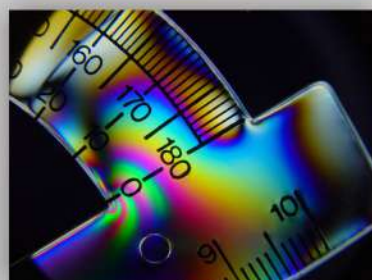


Observing magnetization dynamics of single molecule magnets using polarized light

2013-2014

PI: Dr. Sabieh Anwar, Department of Physics, SBASSE

Co-PI: Dr. Saleem Rao, King Saud University



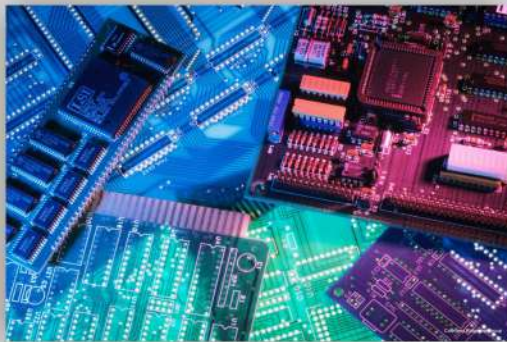
The project starts with the synthesis of SMM's with high blocking temperature (TB) and thin film preparation by binding to functionalized surfaces, without disturbing the native crystal structure and hence preserving its macroscopic quantum properties. The experimental investigations is complemented by detailed theoretical investigations on (b) effect of the nuclear spin on magnetization dynamics, (c) proposals on the possibility of quantum computing using electron and nuclear spin double resonance (ENDOR), (d) quantum mechanical and semi-classical descriptions of the interaction of polarized harmonic electric fields with giant magnetic moments.



Quantum Fluidics in Cavity Polaritons Based on Semiconductor Microcavities

2013-2015

PI: Dr. Ata ul Haq, Department of Physics, SBASSE



The main objective of the project is to investigate quantum fluidics in a cavity polaritonic system under cryogenic temperatures. The lab thus established will enable graduate students and researchers to have access to investigations into the highly active field of quantum optics. Expected outputs include investigation of the polaritonic structure of GaN-based semiconductor microcavities as well as development of a research setup which can be used for low temperature optical

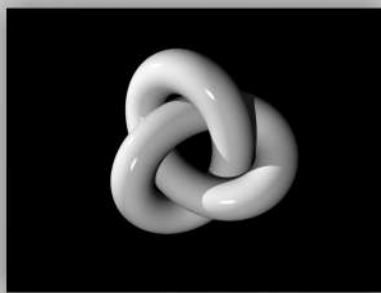
characterization of a variety of nanostructures.



Knot/Link Invariants and Topological String

2011-2012

PI: Dr. Amir Iqbal, Department of Physics, SBASSE



Knot/Link invariants are mathematical functions (usually polynomials) which distinguish knots/Links. If knot invariants of two knots are different then these two knots cannot be deformed into each other without breaking them. Obtaining new knot invariants which distinguish a larger class of knots is a very important problem in knot theory. Recently Mikhail Khovanov defined new invariants of knots now known as Khovanov invariants or Homological invariants. In this project it is intended to study

the properties of these operators and extend the class of links and knots for which such a physical system can be found.



Consultancy Services



CONSULTANCY SERVICES

Trade with Africa

2012-2012

PI: Dr. Kashif Z Malik, Department of Economics, MGS SHSS
Co-PI: Adeel Faheem, Department of Economics, MGS SHSS



The research project is about trade relations between Pakistan and African countries. Since Africa has recently become the preferred trading partner of some countries there has been a lot of interest about this. The study covers key areas regarding opportunities between Pakistan and other trading countries with focus on Africa.



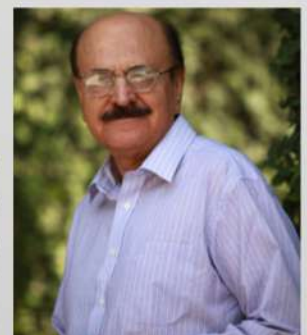
Consumer Preferences for Sales and Service Operations

2012-2012

PI: Dr. Abid A Burki, Department of Economics, MGS SHSS



The objective of this initiative is to generate a primary data resource that could be used to analyze consumer behaviour for automobile demand in Pakistan and to construct a comprehensive ranking of its 3s dealership based on their sales and service operations.



Cluster-based Industrialization and its Effect on Productivity of Manufacturing Firms in Pakistan

2013-2014

PI: Dr. Hadia Majid, Department of Economics, MGSHSS



The consultancy provides support to study policy issues in regard to Cluster-based Industrialization and its Effect on Productivity of Manufacturing Firms in Pakistan. The work involves collection of literature, digging down into official files, collection of primary and secondary data, conducting analyses, and writing of the reports.



Investment Opportunities and Access to Finance for Improving Intra-Kashmir Trade

2012-2012

PI: Dr. Hammad Siddiqi, Department of Economics, MGSHSS



The objective of the initiative is to explore, analyze and document different opportunities of access to finance from cross LOC trade stakeholders. It also includes analysis and documentation of operational modalities of different opportunities as well as looking for investment opportunities and provide recommendations to stakeholders.



CONSULTANCY SERVICES

Plan Pakistan early childhood care and development

2013-2013

PI: Dr. Hadia Majid, Department of Economics, MGSHSS



The research requires a complete review of the relevant literature and secondary data on Early Childhood Education Policies and Practices Internationally as well as Pakistan. It also involves conducting meetings with stakeholders at national level i.e. National and Provincial Education Departments and Ministries, International organisations and donor agencies and local civil society organisations that have ongoing interventions in the early childhood education sector.



Punjab Governance Reforms for Service Delivery

2013-2013

PI: Dr. Sohaib A. Khan, Department of Computer Science, SBASSE



The project involves studying the problem of property tax assessment, billing, collection, performance, management and enforcement. The work involves implementation of the Punjab Governance Reforms for service delivery by assisting and reviewing ICT innovations in tax reforms under the programme and introduces further ideas for the same.



CONSULTANCY SERVICES

IT Restructuring and Capacity Building

2011-2011

PI: Dr. Shafay Shamail, Department of Computer Science, SBASSE



The objective of this assignment is to provide services to build the capacity of the IT Staff in accordance with the vision of the organisation as identified by the management.



Coca Cola Economic Impact Study

2013-2013

PI: Dr. Kashif Z Malik, Department of Economics, SBASSE



The objective of this study is to explore and measure the economic impact of Coca-Cola beverages on Pakistan's economy in terms of income, job creation, tax contributions etc. The study assesses the direct, indirect and induced effects Coca-Cola has produced in the economy.



Travel Grants



TRAVEL GRANTS

Aamir Khan

Sponsor: LUMS (FTG)

Event: 22011 Annual Conference of China Marketing Science

Venue: Guangzhou, China

Abdul Karim Khan

Sponsor: LUMS (FTG)

Event: Academy of Management Annual Meeting

Venue: Orlando, USA

Sponsor: LUMS (FTG)

Event: 3rd South Asian Management Research and Case Conference

Venue: Bangalore, India

Abdur Rehman Malik

Sponsor: HEC

Event: 12th European Conference on Creativity and Innovation

Venue: Faro, Portugal

Sponsor: HEC

Event: British Academy of Management - Annual Conference 2012

Paper Title: Rewards and Creativity: Bringing new Actors into the debate

Venue: Cardiff, U.K.

Abubakr Muhammad

Sponsor: HEC

Event: 20th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2012)

Paper Title: Optimal Simplex Distribution in Homological Sensor Network

Venue: Melbourne, Australia

Sponsor: HEC

Event: IEEE International Conference on Networking, Sensing and Control

Paper Title: Sample Size Reduction in Groundwater Surveys Via Sparse Data Assimilation

Venue: Paris, France

Sponsor: HEC

Event: ACM/IEEE Third International Conference on Cyber-Physical Systems

Paper Title: Model-Driven Performance Analysis of Large Scale Irrigation Network

Venue: Beijing, China

Sponsor: LUMS (FTG)

Event: 2012 IEEE Multi-Conference on Systems and Control

Venue: Dubrovnik, Croatia

Sponsor: LUMS (FTG)

Event: 2011 IEEE International Conference on Robotics and Automation (ICRA'11)

Venue: Shanghai, China

Adeel Ahmad Pasha

Sponsor: HEC

Event: 16 Euro Micro Digital System Design Conference 2013

Paper Title: Component-Level Data path merging in System-Level Design of Wireless sensor Node Controllers for FPGA-based Implementations

Venue: Santander, Spain

Adnan Zahid

Sponsor: LUMS (FTG)

Event: Harvard University

Venue: Boston, USA

Ali Khan

Sponsor: LUMS (FTG)

Event: The Pleasure of the Spectacle

Venue: London, U.K.

Amber Riaz

Sponsor: LUMS (FTG)

Event: The Gettier Problem at 50

Venue: Edinburgh, U.K.

TRAVEL GRANTS

Sponsor: HEC

Event: Judgment and Justification

Paper Title: The Role of Moral Testimony

Venue: Tampere, Finland

Anjum Fayyaz

Sponsor: HEC

Event: 2013 Orlando International Academic Conference

Paper Title: Collective Success or Collective Failure? The Sialkot Football Manufacturing Industry's Response to International Labour Standards Pressures

Venue: Orlando, USA

Sponsor: HEC

Event: The 56th Annual ICSB World Conference 2011

Venue: Stockholm, Sweden

Sponsor: LUMS (FTG)

Event: International Conference on SME

Paper Title: Corporate Social Responsibility, and Competitiveness in Developing Countries: Towards a New Research Agenda

Venue: Copenhagen, Denmark

Sponsor: LUMS (FTG)

Event: 2011 World Conference of the Int'l Council for Small Business

Venue: Stockholm, Sweden

Anwar Khurshid

Sponsor: LUMS (FTG)

Event: North American Case Research Association NACRA Conference 2012

Venue: Boston, USA

Sponsor: LUMS (FTG)

Event: Annual Conference of the North American Case Research Association (NACRA)

Venue: Victoria, Canada

Arif Iqbal Rana

Sponsor: LUMS (FTG)

Event: North American Case Research Association NACRA Conference 2012

Venue: Boston, USA

Sponsor: HEC

Event: 7th International Critical Management Studies Conference

Paper Title: Unbundling Electricity critical discourse analysis of a western model implemented in global south

Venue: Naples, Italy

Asim Karim

Sponsor: HEC

Event: PAKKD 2012

Paper Title: Clustering and Understanding Documents via Discrimination Information Maximization

Venue: Kuala Lumpur, Malaysia

Sponsor: HEC

Event: IEEE International Conference on Data Mining (ICDM 2013)

Paper Title: Controlling Attribute Effect in Linear Regression Models

Venue: Dallas, USA

Sponsor: LUMS (FTG)

Event: Int'l ACM Conference on Information and Knowledge Management

Venue: Glasgow, U.K.

Sponsor: LUMS (FTG)

Event: 9th Int'l Conference on Machine Learning and Application

Paper Title: Unbundling Electricity critical discourse analysis of a western model implemented in global south

Venue: Washington DC, USA

TRAVEL GRANTS

Sponsor: LUMS (FTG)

Event: IEEE International Conference on Data Mining (ICDM2013)

Paper Title: Clustering and Understanding Documents via Discrimination Information Maximization

Venue: Dallas, USA

Atif Alvi

Sponsor: HEC

Event: 3rd International Workshop on Communication Technologies for Vehicle (Nets4Cars 2011)

Paper Title: Towards Standardization of In-car Sensors

Venue: Munich, Germany

Ayesha Bhatti

Sponsor: LUMS (FTG)

Event: 2nd Module of GLOCOLL Program at Harvard Business School

Paper Title: Towards Standardization of In-car Sensors

Venue: Boston, USA

Basit Yameen

Sponsor: HEC

Event: 10th International Conference on Materials Chemistry 10 (MC10)

Paper Title: Polymer brushes: A resourceful opportunity towards functional materials

Venue: Manchester, U.K.

Danish Khan

Sponsor: HEC

Event: The 9th Aims Conference on Dynamical Systems, Differential Equations and Applications

Paper Title: Conservation laws of some evolution equations via non variation approach

Venue: Manchester, U.K.

Emma Varley

Sponsor: LUMS (FTG)

Event: American Anthropological Association Annual Meeting

Paper Title: Unbundling Electricity critical discourse analysis of a western model implemented in global south

Venue: Montreal, Canada

Fahad Javed

Sponsor: HEC

Event: International Conference on Applied Energy 2011

Paper Title: A Cooperative Demand Response System for Small Scale Commercial Consumers

Venue: Pretoria, South Africa

Farrah Arif

Sponsor: LUMS (FTG)

Event: 3rd South Asian Management Research and Case Conference

Venue: Bangalore, India

Sponsor: HEC

Event: Winter Marketing Educator's Conference 2013

Paper Title: Materialism and Self-brand Connections in Young Consumers: The Role of Parent-child Interaction

Venue: Las Vegas, USA

Ghazala Irfan

Sponsor: LUMS (FTG)

Event: 10th East West Philosopher's Conference at the University of Hawaii

Venue: Honolulu, Hawaii, USA

Hamid Abdul Basit

Sponsor: HEC

Event: International Conference on Software Maintenance 2012

Paper Title: Things Structural Clones Tell that Simple Clones Don't

Venue: Trento, Italy

TRAVEL GRANTS

Hammad Siddiqui

Sponsor: LUMS (FTG)

Event: Global Finance Conference 2012

Venue: Chicago, USA

Sponsor: LUMS (FTG)

Event: Inaugural Miami Finance Conference on Behavioral Finance

Paper Title: Materialism and Self-brand Connections in Young Consumers: The Role of Parent-child Interaction

Venue: Miami, USA

Hasan Karrar

Sponsor: LUMS (FTG)

Paper Title: Markets and Merchants in Central Eurasia, Part 1: Formal and Informal Trade Modalities between the People's Republic of China and the Republic of Kyrgyzstan

Venue: China - Krygzstan

Sponsor: LUMS (FTG)

Event: Inter-Asian Connections III: Shifting Geopolitical Ecologies and New Spatial Imaginaries

Venue: Hong Kong

Hassan A. Khan

Sponsor: HEC

Event: 41st European Microwave Week, Manchester, U.K.

Paper Title: Impact of surface recombination on the responsivity of GaAs and InP based heterojunction photo transistors

Venue: Manchester, U.K.

Ihsan Ayyub Qazi

Sponsor: HEC

Event: IEEE-ICC 2012

Paper Title: Improving Performance of Router-Assisted Transport Protocols over Variable Capacity Link

Venue: Ottawa, Canada

Sponsor: HEC

Event: 19th International Conference on Neural Information Processing

Paper Title: Markovian Models for Electrical Load Prediction in Smart Buildings

Venue: Doha, Qatar

Sponsor: HEC

Event: 32nd International Conference on Computer Communication (INFOCOM2013)

Paper Title: Minimizing Flow Completion Times in Data Centres

Venue: Turin, Italy

Ijaz Haider Naqvi

Sponsor: HEC

Event: ICC2013

Paper Title: Frequency Band Selection and Channel Modelling for WSN Applications using simple Nano

Venue: Budapest, Hungary

Sponsor: HEC

Event: IEEE Global Communications Conference (GlobeCom 2012)

Paper Title: Support Vector Machine based Fault Detection & Classification in Smart Grid

Venue: Anaheim, USA

Imran Naeem

Sponsor: HEC

Event: The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications

Paper Title: Group classification of nonlinear equations on different surface

Venue: Orlando, USA

Irfan Butt

Sponsor: LUMS (FTG)

Event: Research Collaboration

Venue: Ottawa, Canada

TRAVEL GRANTS

Sponsor: HEC

Event: 54th Annual Conference of Administrative Sciences Association of Canada

Paper Title: A Tri-Country Marketing Project Preparing Students for the Realities of a Global Marketplace

Venue: Montreal, Canada

Irshad Hussain

Sponsor: LUMS (FTG)

Event: Nanotechnology for Biology and Biomedical Applications (Nano-Bio-Med 2013)

Venue: Miramare-Trieste, Italy

Jahangir Ikram

Sponsor: LUMS (FTG)

Event: Int'l Conf. on Applied Energy 2013

Venue: Pretoria, South Africa

Jamal Abdul Nasir

Sponsor: HEC

Event: 18th Edition of International Symposium on String Processing and Information Retrieval (SPIRE 2011)

Paper Title: Knowledge based semantic kernel for text classification

Venue: Tuscany, Italy

Junaid H. Siddiqui

Sponsor: LUMS (FTG)

Event: 28th IEEE/ACM International Conference on Automated Software Engineering (ASE 2013)

Venue: Silicon Valley, USA

Sponsor: HEC

Event: 28th IEEE/ACM

Venue: California, USA

Junaid S. Ahmed

Sponsor: LUMS (FTG)

Event: 28th IEEE/ACM International Conference on Automated Software Engineering (ASE 2013)

Venue: Silicon Valley, USA

Sponsor: LUMS (FTG)

Event: 39th AMSS Annual Conference

Venue: Chicago, USA

Kamran Ali Chatha

Sponsor: HEC

Event: Administrative Science Association of Canada (ASAC 2012)

Paper Title: Thematic Developments in manufacturing strategy: A content Analysis

Venue: Newfoundland, Canada

Sponsor: LUMS (FTG)

Event: 54th Annual Conference of the Administrative Sciences Association Canada

Venue: Montreal, Canada

Khalid Mir

Sponsor: LUMS (FTG)

Event: Engineering Ethics Workshop

Venue: Illinois, USA

Khawar Sarfraz

Sponsor: HEC

Event: 19th IFIP/IEEE International Conference on very large scale integration VLSI-SoC 2011

Paper Title: A Novel Low-Leakage 8T Differential SRAM Cell

Venue: Kowloon, Hong Kong

Livia Holden

Sponsor: LUMS (FTG)

Event: Law and Society Annual Meeting

Venue: Honolulu, Hawaii

Sponsor: LUMS (FTG)

Event: Hawaii Int'l Conference on Social Sciences

Venue: Honolulu/San Francisco, USA

Maryam Khan

Sponsor: LUMS (FTG)

Event: 2nd Conference of the Law and SS Research Network

Venue: Pune, India

TRAVEL GRANTS

Sponsor: LUMS (FTG)

Event: Law and Social Sciences Research Network Conference

Venue: Sri Lanka

Mian Muhammad Awais

Sponsor: LUMS (FTG)

Event: 19th Int'l Conference on Neural Information Processing

Venue: Doha, Qatar

Sponsor: LUMS (FTG)

Event: 20th International Conference on Neural Information Processing (ICONIP2013)

Venue: Daegu, Korea

Momin Uppal

Sponsor: HEC

Event: IEEE Global Communications Conference
Paper Title: A multi-level design for dirty paper coding with applications to the cognitive radio channel

Venue: Houston, USA

Mohammad Hanif Mian

Sponsor: LUMS (FTG)

Event: Australian Statistical Conference

Venue: Perth, Australia

Muhammad Abdur Rahman Malik

Sponsor: HEC

Event: British Academy of Management - Annual Conference 2012

Paper Title: Rewards and Creativity: Bringing new Actors into the debate

Venue: Cardiff, U.K.

Muhammad Athar Siddiqui

Sponsor: LUMS (FTG)

Event: Newcastle University, Business School

Venue: Newcastle, U.K.

Muhammad Fareed Zaffar

Sponsor: LUMS (FTG)

Event: Stanford Research Institute

Venue: California, USA

Sponsor: LUMS (FTG)

Event: Hawaii International Conference on System Sciences (HICSS-47) 2014

Venue: Big Island, USA

Muhammad Farooq Nasir

Sponsor: LUMS (FTG)

Event: 55th Annual CIES Conference

Venue: Montreal, Canada

Muhammad Ghufuran Ahmad

Sponsor: LUMS (FTG)

Event: Harvard University

Venue: Boston, USA

Muhammad Junaid Ashraf

Sponsor: LUMS (FTG)

Event: 14th Int'l Association of Critical Realism

Venue: Oslo, Norway

Sponsor: LUMS (FTG)

Event: 7th Asia Pacific Interdisciplinary

Venue: Japan

Sponsor: LUMS (FTG)

Event: Interdisciplinary Perspectives on Accounting Conference 2012

Venue: Cardiff, U.K.

Muhammad Naiman Jalil

Sponsor: HEC

Event: 3rd South Asian Management Research and Case Conference 2013

Paper Title: Designing the Milk Collection Network

Venue: Bangalore, India

TRAVEL GRANTS

Sponsor: LUMS (FTG)
Event: Harvard University
Venue: Boston, USA

Muhammad Saqib Ilyas

Sponsor: HEC
Event: IEEE INFOCOM 2012
Paper Title: RED-BL: Energy Solution for Loading Data Centre
Venue: Orlando, USA

Muhammad Shakeel Sadiq Jajja

Sponsor: HEC
Event: 2012 Annual POMS Conference
Paper Title: The Impact of Supply Chain Strategy on Supplier Functions and Organizational Performance
Venue: Chicago, USA

Mujahid Abbas

Sponsor: LUMS (FTG)
Event: University of Birmingham
Venue: Birmingham, U.K.

Sponsor: HEC
Event: World Congress on Engineering, U.K.
Paper Title: Fixed Point Theorems for OWC maps in Cone Symmetric Space
Venue: London, U.K.

Mumtaz Sheikh

Sponsor: HEC
Event: SPIE Photonics West
Paper Title: Flat spectral response all-digital broadband variable fiber-optic attenuator
Venue: San Francisco, USA

Nadeem Khan

Sponsor: LUMS (FTG)
Event: Visual Communications and Image Processing
Venue: Tainan, Taiwan

Sponsor: HEC
Event: 37th International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012)
Paper Title: Complexity scalable IDCT based approaches for power efficient video decoding
Venue: Kyoto, Japan

Nauman A. Zaffar

Sponsor: LUMS (FTG)
Event: 3rd International Conference on Electric Power and Energy Conversion Systems (EPECS 2013)
Venue: Istanbul, Turkey

Naveed Arshad

Sponsor: HEC
Event: Sustainability in Energy and Buildings 2012
Paper Title: Spectral properties of expensive configuration spaces: An empirical study
Venue: Stockholm, Sweden

Sponsor: LUMS (FTG)
Event: Sustainability in Energy and Buildings 2013
Venue: Fez, Morocco

Nida Kirmani

Sponsor: LUMS (FTG)
Event: 2nd Int'l Symposium on Language and Communication: Exploring Novelities
Venue: Nottingham, U.K.

Osama A Khan

Sponsor: HEC
Event: 24th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2012)
Paper Title: A Rule-based Model for Normalization of SMS Text
Venue: Athens, Greece

TRAVEL GRANTS



Osama Siddiqui

Sponsor: LUMS (FTG)

Event: Law and Social Sciences Research Network Conference

Venue: Sri Lanka

Richard Ganis

Sponsor: LUMS (FTG)

Event: 52nd annual meeting of the European society for phenomenology and existential philosophy

Venue: Oregon, USA

Saad Azmat

Sponsor: LUMS (FTG)

Event: Global Colloquium on Participant-Centred Learning

Venue: Boston, USA

Sadaf Ahmad

Sponsor: LUMS (FTG)

Event: Muslim Women and the Challenge of Authority

Venue: Boston, USA

Sponsor: LUMS (FTG)

Event: Society for Cinema and Media Studies Annual Conference

Venue: Seattle, USA

Salman Khan

Sponsor: LUMS (FTG)

Event: Global Colloquium on Participant-Centred Learning

Venue: Boston, USA

Shafay Shamail

Sponsor: LUMS (FTG)

Event: 7th International Conference on Theory and Practice of Electronic Governance (ICEGOV 2013)

Venue: Seoul, Korea

Shahab Baqai

Sponsor: LUMS (FTG)

Event: IEEE Int'l Conference on Communications ICC 2012

Venue: Ottawa, Canada

Shahid Masud

Sponsor: HEC

Event: 37th IEEE International Conference on

Paper Title: Teaching and research in FPGA based signal processing using Xilinx system generators

Venue: Kyoto, Japan

Sponsor: HEC

Event: IEEE International Symposium on Circuits and Systems

Paper Title: Design and Implementation of an ML Decoder for Tail-Biting Convolutional Codes

Venue: Beijing, China

Sponsor: LUMS (FTG)

Event: 2013 IEEE int'l Symposium on Circuits and Systems

Venue: Beijing, China

Shazib Shaikh

Sponsor: LUMS (FTG)

Event: 2012 Int'l Conference on Information Systems

Venue: Florida, USA

Sponsor: LUMS (FTG)

Event: North American Case Research Association (NACRA) Conference

Venue: Texas, USA

Sponsor: HEC

Event: 33rd International Conference on Information Systems (ICIS 2012)

Paper Title: Business Intelligence at Telenor Pakistan

Venue: Orlando, USA

TRAVEL GRANTS

Syed Muhammad Hussain

Sponsor: LUMS (FTG)

Event: Economic Review Conference 2013

Venue: Singapore

Syed Zahoor Hassan

Sponsor: HEC

Event: 20th Annual World Business Congress

Paper Title: Building a Global IT Company in a Developing Country through Innovation Case of NetSol from Pakistan

Venue: Poznan, Poland

Tariq Butt

Sponsor: LUMS (FTG)

Event: University of Cambridge

Venue: University of Cambridge, U.K.

Umar Saif

Sponsor: LUMS (FTG)

Event: HotNets 2011

Venue: Cambridge, USA

Zartash A. Uzmi

Sponsor: HEC

Event: International Conference on Computer Communication Networks

Paper Title: TaCo: Semantic Equivalence of IF prefix tables

Venue: Naples, Italy

Sponsor: HEC

Event: ACM CoNEXT 2011

Paper Title: Practical and near optimal FIB aggregation with SMALTA

Venue: Tokyo, Japan

Sponsor: HEC

Event: North American Case Research Association (NACRA) Conference

Venue: Texas, USA

Sponsor: HEC

Event: International Conference of communication 2013

Paper Title: SplitBuff: Improving the Interaction of Heterogeneous RTT Flows on the Internet

Venue: Budapest, Hungary

Sponsor: LUMS (FTG)

Event: ACM Sensys 2011

Venue: Seattle, USA

Sponsor: LUMS (FTG)

Event: IEEE ICC

Venue: Turin, Italy

Zeeshan Ali Rana

Sponsor: HEC

Event: Using Association Rules to Identify Similarities between Software Dataset

Paper Title: Using Association Rules to Identify Similarities between Software Dataset

Venue: Lisbon, Portugal



Externally Funded Events



EXTERNALLY FUNDED EVENTS



AJMC Conference 2011

Event: Conference

Organiser: Dr. Shazib Ehsan Sheikh

Sponsor: HEC

LUMS Human Resource Confluence 2011

Event: Seminar

Organiser: Dr. Rizwan Amin Sheikh

Sponsor: HEC

Bioinformatics and Computational Biology Workshop

Event: Workshop

Organiser: Dr. Kamran Haider

Sponsor: HEC

4th Winter Meeting in Particles and Fields

Event: Conference

Organiser: Dr. Babar Qureshi

Sponsor: HEC

National Laboratory Immersion

Event: Workshop

Organiser: Dr. Sabieh Anwar

Sponsor: Corvit networks/Air University/NI

Title: Third German-Pakistani workshop on field and Assistive Robotics (WFAR3)

Event: Workshop

Organiser: Dr. Abubakr Muhammad

Sponsor: HEC, DAAD

AJMC Conference 2013 2nd international case Conference

Event: Conference

Organiser: Dr. Shazib Ehsan Sheikh

Sponsor: SAGE Publication India

Model UN Conference

Event: Conference

Organiser: Mr. Zarak Pasha

Sponsor: US Consulate (PAS)

International Conference on Intelligent Water Grids (IWG)

Event: Conference

Organiser: Dr. Shahid Masud

Sponsor: ICT R&D Fund

Research and writing workshop in Environmental Economics

Event: Workshop

Organiser: Dr. Adil Najam

Sponsor: SANDEE

Optimization in Communications and Signal Processing

Event: Workshop

Organiser: Dr. Shahid Masud

Sponsor: National Talent Pool

Foreign Services Academy for the LUMS-FSA Workshop

Event: Workshop

Organiser: Ambassador Shaharyar Khan

Sponsor: Foreign Services Academy

EXTERNALLY FUNDED EVENTS



CATAR 2012 Context-Aware Technologies for Assistive Robotics

Event: Workshop
Organiser: Dr. Nadeem Khan
Sponsor: DAAD

Seminar on Innovation by Pakistan Innovation Fund

Event: Seminar
Organiser: Dr. Shahid Masud
Sponsor: Pakistan Innovation Fund-PIF

Recent Trends in Chemical Research- Probing the Boundaries

Event: Conference
Organiser: Dr. Rehman S Z Saleem
Sponsor: Fulbright, Kamstec International

An International Symposium On Nanomaterials Potential Applications And Challenges

Event: Workshop
Organiser: Dr. Irshad Hussain
Sponsor: Rayz Technologies

New Horizons in Islamic Area Studies

Event: Conference
Organiser: Dr. Ali Khan
Sponsor: Saweda University (Japan Foundation)

10th South Asian Economics Students' Meet 2013 at LUMS

Event: Workshop
Organiser: Dr. S. M Turab Hussain
Sponsor: World Bank, PEPSI, UBL, FFC

Recent Advances in Commutative Algebra with Algebraic Geometry

Event: Workshop
Organiser: Dr. Faqir Muhammad Bhatti
Sponsor: HEC

Governance and Public Policy Making a Eurasian Dialogue

Event: Conference
Organiser: Dr. Muhammad Waseem
Sponsor: DAAD

HSS Annual Conference 2014

Event: Conference
Organiser: Dr. Hassan H Karrar
Sponsor: IGC

4th National LUMS Moot Court Competition 2013

Event: Competition
Organiser: Dr. Ali Mohsin Qazilbash
Sponsor: University of Pennsylvania

Memorandum of Understanding



MEMORANDUM OF UNDERSTANDING



MOU with Academic Institutions

Mehran University of Engineering & Technology (MUET)

2014

Purpose: Collaboration in research project

International Centre for Theoretical Physics (ICTP)

2014

Purpose: Visit of LUMS scientist to International Centre for Theoretical Physics (ICTP)

Baluchistan University of Information Technology and Engineering and Management Sciences (BUIITEMS)

2013

Purpose: Training imparted

Institute of Chartered Accountants of Pakistan (ICAP)

2013

Purpose: Course outcomes for BSc ACF programme

Institute of Business Administration (IBA), Karachi

2013

Purpose: Joint training programmes

Institute of Business Administration (IBA), Sukhur

2013

Purpose: Joint training programmes

Institute of Management and Sciences (IMS), Peshawar

2013

Purpose: Joint training programmes

O.P. Jindal Global University, India

2013

Purpose: Exchange of study material

Paderborn University, Germany

2012

Purpose: Cooperation in the areas of Science and Engineering

MEMORANDUM OF UNDERSTANDING



University of Kaiserslautern, Germany

2012

Purpose: Research collaboration in e-Agriculture

Indian Council for Research on International Economic Relations

2012

Purpose: Strengthening Research and Promoting Multi-level Dialogue for Trade Normalization

University of Applied Sciences, Germany

2012

Purpose: Foster a friendly relationship through mutual cooperation in research and teaching.

Humboldt-Universität zu Berlin, Germany

2012

Purpose: Exchange of undergraduate and graduate students for short-term study and formal degree programs

School of International Liberal Studies WASEDA University, Japan

2010

Purpose: Faculty and students exchange

Mälardalen University

2011

Purpose: Reinforcement of sustainable technological, educational, cultural and scientific link between Europe and Asia

Indian Institute of Science

2010

Purpose: Cooperation in the areas of Science and Technology

University of Applied Sciences Joanneum

2010

Purpose: Faculty and students exchange

University of Passau

2010

Purpose: Exchange and collaboration

MEMORANDUM OF UNDERSTANDING



MOU with Industrial Organizations

Packages Pvt (Ltd)

2012

Purpose: Collaboration to explore cooperation in research project

Descon Chemicals Limited, Pakistan

2011

Purpose: Research collaboration to develop industry related commercial products

Mitsubishi Corporation

2009

Purpose: Mitsubishi Corporation provides financial support to LUMS for research activities

MOU with Other Organizations

South Asia Centre for Policy Studies (SACEPS)

2010

Purpose: to conduct a study on Coordinated Development of Manufacturing Industry in South Asia

Lahore Conservation Society

2012

Purpose: Co-organize seminars/conferences and conduct research studies

The Knowledge Factory (TKF)

2013

Purpose: Outreach and connecting universities to school students

Zavia Productions

2013

Purpose: to guide and encourage students to write, direct and perform a play in Urdu

Pakistan Institute for Environment Development Action Research (PIEDAR)

2013

Purpose: LUMS and PIEDAR to achieve technical expertise

MEMORANDUM OF UNDERSTANDING



Brookhaven National Laboratory

2013

Purpose: To Access the relativistic heavy ion collider (RHIC) at Brookhaven National Laboratory

Centre for Dialogue and Reconciliation (CDR)

2013

Purpose: Joint seminars, conferences and events

Punjab Information Technology Board

2013

Purpose: To maximize the effectiveness of the Citizen Feedback

World Wide Fund

2012

Purpose: Determination of the impact of climate adaptation on the Indus Eco Region

International Development Research Centre

2012

Purpose: Determination of the impact of climate adaptation on the Indus Eco Region

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