Dr. Panjwani Centre
for Molecular Medicine and Drug Research (PCMD)

Introduction
Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD) was established through a generous support and patronage of Ms. Nadira Panjwani, H.I. (Chairperson, Dr. Panjwani Trust). Late Dr. Muhammad Hussain Panjwani was a leading scholar and philanthropist. The PCMD has initiated numerous scientific programs focusing on possible diagnosis, prevention and treatments of often neglected and prevalent diseases of Pakistan, as well as associated human resource development.

The main objective of the center is to train highly qualified manpower in the emerging fields of molecular medicine and drug development. The academicians, clinicians and pharmaceutical researchers are working together to translate basic scientific discoveries into new therapies, vaccines and diagnostic tests. The efforts in the center is mainly focused on developing greater and more comprehensive understanding of the pattern and causes of most common diseases of Pakistan in order to develop effective diagnostic tools and affordable treatments by using molecular medicinal, chemical and computational methods.

Career Opportunities
The mission of the center is to foster excellence and achieve international recognition in the targeted areas of graduate training and research, which are relevant to national needs. To accomplish this mission, the center is involved in:
- Enhancing the scientific training of graduate students in the area of molecular medicine and rational drug designing.
- Focusing on the development of new and effective diagnostic, and treatment techniques for prevalent diseases.
- Providing forum for information exchange between academic disciplines and raising general awareness about the diseases and their prevention, cure and treatments.

By the advent of next generation DNA sequencing technologies, genome research has become fast, cost effective and robust. International efforts are underway to study human genomes from specific population groups of distinct ethnic and geographic backgrounds to utilize these genomic information in biomedical research. In this scenario, the ICCBS is establishing a dedicated genomics center as a part of PCMD to strengthen the ongoing molecular medicine research efforts and to train the manpower in this cutting edge area of biology. The building of the new center is under construction by the personal donation of Prof. Atta-ur-Rahman FRS, Patron-in-Chief ICCBS institutions. The next generation DNA sequencer and related equipments have already been procured. Initially the researchers at the center are sequencing human genomes from Pakistani population. Genome wide analysis will be performed to understand the genetic basis of complex polygenic disorders.

The PCMD also has a MoH (Ministry of Health) certified center for Bioequivalence Studies and Bioassay Research (CBSBR) and an ISO 9001 certified network of diagnostic centers.

Facilities
Well-equipped labs including:
- Tissue engineering and Stem Cell Research
- Cancer Diagnosis and Cancer Cell Line Laboratory
- Tropical Disease Research
- Infectious Agent and Disease
- Degenerative Diseases
- Proteomics and Enzymology
- Molecular Epidemiology
- Genomics, Bioinformatics and Computational Biology
- Human Genetics and Gene Therapy
- Molecular Pharmacology and Drug Resistance
- Clinical Pharmacology
- Prenatal Diagnosis
- Drug Discovery, Design and Synthetic Medicinal Chemistry
- Diagnostic and Clinical Research Facility
- Imaging Facility
- Molecular Bank Facility

Specific Research Areas
Visit our website www.iccs.edu/hej/index.php

Faculty Members
Visit our website: www.iccs.edu

Programs Available
- M. Phil / M. Phil. Leading to Ph.D. in various disciplines of molecular medicine.

For Further Enquiry
Telephone: 922134824924-5, 34819010
Website: www.iccs.edu
H.E.J. Research Institute of Chemistry (International Centre for Chemical and Biological Sciences)

Introduction
The International Center for Chemical and Biological Sciences (ICCBS) is one of the world’s finest research institutions and training centers in its field. The large complex which covers more than 40 hectares, is comprised of 12 research buildings that contain some of the region’s most sophisticated laboratory equipment. The complex also includes a pilot plant, powerhouse, green houses, animal house facility, auditorium and a residential with 50 houses, five apartment buildings and an international guesthouse.

The ICCBS carries out original research, training, product development and service delivery in the chemical, biological and biomedical sciences. The center also provides diagnostic, analytical and clinical testing for a broad range of clients on both the public and private sectors nationally and internationally.

Over the past 40 years, more than 700 students have earned doctorate and M. Phil degrees at the center. These degree-granting programs have served as the focal points of ICCBS efforts to provide world-class training to young scientists coming primarily from developing countries, including those belonging to the Organization of Islamic Cooperation (OIC), an international network comprised of 57 Muslim countries, Non-Aligned Movement (NAM) and African Union.

The ICCBS also conducts cutting-edge research for the discovery of clinically important enzyme inhibitors and antioxidants, explores innovative methodologies for the synthesis of novel pharmacophores and isolate proteins, devises effective pharmacological evaluations of bioactive compounds, and seeks to identify new varieties of horticulture plants through applications of biotechnology.

In addition, the ICCBS organized major international conferences, symposia and workshops for participants from Pakistan and abroad on topics ranging from natural products, molecular medicine, spectroscopy, nanotechnology and computational medicinal chemistry.

Prof. Dr. Atta-ur-Rahman – Pakistan’s former minister of science and technology and chair of HEC - currently serves as ICCBS Patron-in-chief providing strategic guidance for the center’s broad-ranging goals. Between 1990 and 2002, he was ICCBS director, guiding the center through a period of unprecedented growth. The current director is Prof. Dr. M. Iqbal Choudhary, the most cited chemist of Pakistan, who was Atta-ur-Rahman’s student nearly 30 years ago. Vice Chancellor of Karachi University, chair the ICCBS executive board.

The ICCBS has twice won the Islamic Development Bank (IDB) Prize for best Science and Technology Institution, in 2004 and 2010.

Career Opportunities
Since the ICCBS is a prime institution of the world, a large number of its graduates are serving the nation in various capacities. The ICCBS graduating scholars continuously receive offers of post-doctoral and academic positions in foreign, as well as in Universities of Pakistan. The scholars who are not interested in academic positions are welcomed by the local industries as trained B. & D or Production Scientists. So far there is not a single instance of any of ICCBS graduate remaining jobless for any considerable period of time.

Facilities
The center has the single largest doctoral program in the country with over 480 Ph.D. students. The main areas of research, development and training of students include natural product chemistry, molecular medicine, protein chemistry, pharmacology, computational chemistry, nanotechnology, plant biotechnology and human genomics. The analytical, spectroscopic, computational, clinical and other facilities present in the institute are at par to any good institutions in the world. The center also has ISO 17025 / 9001 certified Industrial Analytical Center, and Center for Bioequivalence Studies and Bioassay Research which are providing services to over 350 industries in Pakistan.

A number of goal oriented projects relating to the chemistry of natural products, molecular medicine, protein chemistry, plant biotechnology and pharmacology of herbal medicine are being vigorously pursued which has led to the award of over 600 doctorate and 100 M. Phil degrees. The scientific contributions of over 3,800 research papers, 150 books and over 150 international patents have earned international recognition.

Specific Research Areas
Visit our website www.iccs.edu/hej/index.php.

Faculty Members
Visit our website www.iccs.edu/hej/faculty2.php

Programs Available
- M. Phil. Leading to Ph.D. in various disciplines of Chemistry.

For Further Enquiry
Telephone: 92-21-99261701-02, 34824930, 34, 36
34824901-02
Website: www.iccs.edu
National Centre for Proteomics

Introduction
Proteomics refers to the study of all proteins being expressed in a tissue, cell or an organ at a particular point and time. It reflects a snapshot of expressed proteins in the sample being analyzed. Proteomics is being utilized as a core technology globally to understand the role of protein molecules involved in health and disease. The cutting edge technologies used in Proteomics have much greater impact in terms of early diagnosis and offers tremendous potential in prevention and therapeutics. A recently established Institute, NCP is working to facilitate fundamental understanding of disease states by discovery of biomarkers and translation of these advances to improve clinical diagnostics using laboratory investigations and bioinformatics methods. Proteomic technologies use a combination of chromatography, electrophoresis, Mass spectrometry and bioinformatics tools. Various projects on different types of cancers, diabetes, eye disorders, role of glycation and antioxidants in aging are in progress at the institute.

Career Opportunities
Proteomics is a specialized filed that deals mainly with identification of proteins, analyzing post-translational modifications, studying differentially expressed proteins etc. The field is suitable for students interested in developing their career as a researcher particularly in area of protein chemistry. Researchers are trained through lectures, wet lab and dry lab sessions in latest techniques involved in genomics and Proteomics. Students completing M. Phil./Ph.D. degree are likely to get job opportunities in research and development organization, Universities, Pharmaceutical industries, medical college and Universities and pathological laboratories etc.

Facilities
NCP has state-of-the-art facilities in the field of Proteomics. The Institute is equipped with instruments such as one and two dimensional electrophoresis.

Western blot, gel doc with image analysis is software like quantity one/PD Quest, spot cutter, conventional and high pressure liquid chromatographic technique with accessories, Millipore water purification system, ice flake machine, FPLC, PCR, QPCR, and LC-MS. NCP also has a computer lab with complete in-silico solutions for data analysis, protein structure prediction, Web based searches and protein docking studies. NCP has a library with different reference books and journals related to genomics and proteomics.

Specific Research Areas
- Proteomics profiling of oral carcinoma in Pakistan
- Drug induced apoptosis
- Oxidative stress in aging and diabetes
- Glycation and aging
- Drug screening against RNA/DNA Viruses
- Venom Proteomics
- Stem Cell Research

Faculty Members
Professor
- Prof. Dr. Shamshad Zarina (Director)

Assistant Professors
- Dr. Faraz Moin
- Dr. Shamim Muhtaq
- Dr. Zehar Manzoor

Programs Available
- M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261300, Ext-2548
Website: ncp.uok.edu.pk
National Nematological Research Centre

Introduction
National Nematological Research Centre (NNRC), leading research and educational institute dedicated to the generation, acquisition and propagation of knowledge about Nematology in Pakistan. NNRC has come to symbolize as an efficient, dynamic and forward looking research centre in Pakistan. Nematology is a highly specialized field of agriculture and requires services of specialists in dealing with nematode diseases of plants and animals. NNRC is the only research centre as well as academic centre, which is solely associated with study and research of Nematology in the country. The main objective of NNRC is to promote the subject of Nematology and generate highly trained manpower through M. Phil / Ph.D degree programs. Ph.D. program in Nematology is aimed at imparting a full range of knowledge, awareness and expertise in Nematology to meet the challenges of the new millennium. International and National Training Workshops also conducted as a part of the routine work/study. NNRC has regularly published bi-annually the scientific journal, Pakistan Journal of Nematology (PJN), since 1983 and PNN Newsletter from 2002, covering the significant research in fundamental and applied Nematology from within and outside the country. The website of PJN: www.pjnn.com.pk

Career Opportunities
The field of Nematology is vast, having the wide range of career opportunities in various disciplines. Research and teaching jobs are available for the pass outs of NNRC in any agriculture related organizations/ universities/ institutions in the country and abroad.

Wide range of career opportunities are also accessible in various organizations like PARC, NARC, Plant protection, Atomic Energy Commission, Institutes of Biotech & Genetic Engineering, Environmental protection Agency, Integrated pest Management (IPM) Services, Quarantine, Seed Certification, Pesticide & Formulations and Herbal & Food Industries. The Nematologists are also hired for providing the diagnostic and consultancy services for field and lab practices.

Faculty Members
Professor
- Dr. Shahina Fayyaz (Director)
- Dr. Zarina Begum, S.S.O

Facilities
NNRC has well equipped laboratories for the research work on fundamental and applied Nematology of plant parasitic nematodes, free-living soil nematodes, free-living marine nematodes, fresh water nematodes and entomopathogenic nematodes. NNRC also has three large modernize equipped research laboratories for advance molecular taxonomy of nematodes especially EPN, their mass production and formulation of these biocontrol agents as a biopesticides. The Library has a collection of more than 1000 books, journals and periodicals about Nematology. Over 19,000 permanent identified slides and vials of wet suspension of nematode specimens. Large experimental field and two green houses are also available to the students and scientists for their research purpose. Diagnostic, advisory and consultancy services have also been provided to the farmers, scientists and extension workers from all over the country and abroad.

Specific Research Areas
The nematology research program includes work on the morphology and molecular taxonomy, biology, pathogenicity, population dynamics, control of plant parasitic nematodes, use of marine nematodes as pollution indicators, entomopathogenic nematodes, the beneficial nematodes in the biological control of insect pests of agriculturally important crops as biopesticides and their mass production, use of free-living soil nematodes as bio fertilizers and more importantly the human Nematology which is going to be established soon. Short and long term training program in Nematology are also arranged for researchers, students, extension workers and farmers of the country.

Programs Available
- M. Phil./Ph.D.
- Short and long term Training certificate programs.

For Further Enquiry
Telephone: 99261300-6, Ext-2275
Website: www.uok.edu.pk
Applied Economics

Research Centre

Introduction

The Applied Economics Research Centre was established in 1973, with funding from the Ford Foundation and the Provincial Government of Sindh. From its inception, the Centre has undertaken research on issues in applied economics, with special interest being focused in the areas of agriculture, human resources, urban and regional economics and public finance. With subsequent growth of the Centre, its activities have broadened to include the advance training of economists from all parts of Pakistan. A major development in this connection has been the introduction of its own postgraduate degree program, the Master of Applied Science (Economics), which began in 1977. Since 1988, this has been upgraded to a M. Phil./Ph.D. Programme.

Career Opportunities


Facilities

Library

The centre maintains a rapidly expanding library in the field of economics, with particular emphasis in areas of economics related to its principal research interests as well as a wide range of materials used for the teaching program. The library currently subscribes over 200 periodicals in economics and the social sciences. The collection of books number approximately 16000. Included in the library is an extensive collection of government of Pakistan publications, which are used by researchers as a valuable source of data. The library has a large collection of working papers of international agencies like the World Bank, IMF etc. and discussion papers series of Universities abroad.

Computer

The AERC has a fully operational computer cell is equipped with a large number of latest computer models. A large number of software packages are available including SPSS, TSP, SAS, SHAZAM, ESP, LIMDEP, EVIEW, GAUSS, QUATRO-PRO, LOTUS-123, FOX-PRO, DBASE4, which enable sophisticated statistical and econometric analysis and handling large data sets.

Specific Research Areas

The major research areas of the centre are undertaking policy oriented core/academic research and contract research for clients, post graduate teaching and providing advisory services to the government.

Core Research

staff members on their own initiative. Two kinds of core research may be distinguished. First, projects initiated by the centre’s staff in the areas of housing, smuggling, environment, credit, agriculture, finance, nutrition, energy, public finance, trade, industry, monetary economics, poverty, social capital and empowerment of women. Second are projects initiated by the M.S. /M. Phil./Ph.D. student, which have made it possible for the centre to undertake research on relatively small projects in diversified areas. The output from core research finds its way into research published by the staff in referred journals or in the Centre’s own Pakistan Journal of Applied Economics.

Contact Research Project By Area

Contract research is one of the major activities of the AERC and its output is published in a Research Report Series.

Faculty Members

Director and Research Professor

- Prof. Malahat Kalam Sherwani

Senior Research Economists/Associate Professors

- Nighat Bilgrami
- Dr. Saima Khalil
- Dr. M. Pervez Wasti
- Syed Ashraf Wasti
- Mahpara Begum Sadiqa

Research Economists/Assistant Professors

- Dr. Aqum Aqeel
- Akhtar A. Lodhi
- Mr. Minahuddin Siddiqui
- Dr. Ambreen Fatima
- Mohsin Hassan Ahmed
- Dr. Shinta Alam
- Faizan Ifikhar

Staff Economists/Lecturers

- Mr. S. Kamran Abbasi
- Mr. Sohail Javed
- Mr. Noman Saed
- Mr. Syed Roshan Ali
- Mr. Tehseen Iqbal
- Mr. Syed Zia Abbasi
- Mr. Nigar Zehra
- Mr. Faisal Hussian
- Mr. Aghbar Ali
- Mr. Khurram Ifikhar
- Ms. Fouzia Khan

Programs Available

- M.A.S. (Mater of Applied Science in Economics)  
  A terminal degree only  
- M. Phil. (Economics)  
  If the student continues after M.A.S

For Further Enquiry

Telephone: 99261541  
Website: www.aerc.edu.pk

Admissions 2014

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Women’s Studies

Introduction
Since the last 24 years the Centre of Excellence for Women’s Studies (CEWS) has been offering teaching and research facilities in a friendly environment to prepare students to act as agents of change. We are the first to offer M.A. and M. Phil/Ph.D. degree programs in Pakistan along with BS 4-year and B.A. (Hons.) 3-year degree program in Women's Studies. We have an Evening Program for M.A. in Women's Studies. Women's Studies, an interdisciplinary subject, aims to make visible women's role and contribution towards building a gender-bias free society for a holistic development of the nation. We offer a variety of courses to address the issues of women and gender, both nationally and internationally. The major focus of our teaching and research is to bridge the gap between the academia and women at the grass-root level. Thus, our students move beyond the Campus and interact with women to document their every-day lived experiences.

Career Opportunities
As Women's Studies prepares students to act as agents of social change, therefore, our students are well equipped and trained to take up jobs that a person qualified in any other discipline can undertake. Majority of CEWS graduates are now hired in various positions by government and non-government agencies. As one of the requirement of our teaching is practicum, our students work as interns with various GOs/NGOs and thus gain practical training and gain experience. To help our students in their future careers, we remain engage with the corporate sector.

Facilities
CEWS has well-qualified faculty to help and assist students in their quest for knowledge. We also invite scholars, academics and activists from various fields to share their scholarship and experiences with our students.

Our library with its holding of more than 4000 books, journals, reports on women and gender is the only library of its kind in the country. We have a collection of press-clippings on almost all aspects of women’s lives. Our library is accessed not only by our students but it also caters to the academic search needs of scholars, activists and journalist who wish to avail this facility. Soon, our library would be accessible through our electronic portal.

Specific Research Areas
- Women & Work: Child Labour, Girl Child, Self-Employed Women
- Women Technology & Entrepreneurship
- Women, Religion & Religious Traditions
- Health Concerns of Women & Gender
- Women’s History women & Law
- Women & Politics
- Women & Media
- Women Sports & Physical Education
- Psychology of Women
- Development Planning (nationally & globally) and Women

Faculty Members
- Prof. Dr. Nasreen Aslam Shah (Director)
- Prof. Dr. Tahera Aftab
- Prof. Aslam Shah
- Dr. Shagufta Nasreen
- Ms. Aima Manzoor
- Dr. Aliyah Ali
- Ms. Seema Manzoor
- Ms. Aiman Anwar Alavi
- Mr. Syed Faisal Hashmi
- Dr. Muhammad Nadeemullah

Programs Available
- B.A. (Hons.)
- M.A. (Morning & Evening)
- M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261300-06, Ext-2441
Website: www.genderstudiespakistan.com
Dr. A. Q. Khan
Institute of Biotechnology and Genetic Engineering (KIBGE)

Introduction
The Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi broadly aims to impart training in modern day biological sciences, biotechnology and genetic engineering. The main goal of the institute is to disseminate hi-tech training using modern technology to improve the economic wellbeing of the citizens of Pakistan by means of technological innovations in health, industrial and agriculture sectors. The Institute serving to become an educational institution of international standing entrusted with the responsibility of conducting basic and applied research and imparting education in modern biotechnology and genetic engineering. The University of Karachi has allocated 25 acres of land for the creation of the KIBGE and the building of the institute has covered a total area of approximately 100,000 square feet. The complex consists of four main blocks. Including classrooms, laboratories, administration, auditorium and a well established library. There are other on campus facilities like mosque, cafeteria and residential apartment for faculty, scientific staff and students.

Career Opportunities
Biotechnology and Genetic Engineering has a wide variety of career opportunities ranging from sales and marketing, to research and development, to manufacturing and quality control and assurance with biotechnology industry flourishing worldwide, not only are the total number of biotechnology companies are increasing, but employment in the biotechnology field continues to grow as well. Within each area of the biotechnology industry are several different job functions and a career path. Biotechnology industry segments include agriculture & food sciences, bioinformatics, biomedical/human diagnosis, forensic DNA analyses, energy, environmental, industrial, marine, biotechnology, pharmaceuticals, etc.

Facilities
The institute has state-of-the-art laboratory facilities in the field of biotechnology, molecular biology, genetics and genetic engineering. The laboratory equipment is comparable with any of the top ranking universities and laboratories of technologically advanced countries. The infrastructure has been developed according to the needs and requirements of modern day sciences and technologies. The experimental and practical facilities can be easily exploited to work from genomics to proteomics in the above mentioned research areas.

Specific Research Areas
For the last several years, the KIBGE has been actively involved in execution of various research projects in the field of agriculture, industrial and medical biotechnology. These research projects have been funded by various agencies including PSF, HEC, PMRC, etc. The institute has produced 15 Ph.Ds during the year 2013, whereas five more students are expected to submit their PhD theses by the end of this year. Simultaneously, the faculty and scientific staff of the institute have a long list of research publications to their credit which have been published in the research periodicals of international repute. The faculty members and researchers of the institute have got several novel gene sequences as well as protein sequences identified and deposited in gene and protein sequence data banks. The KIBGE has international collaborations with Australian National University, Canberra, Australia; INSERM, University of Paris, France; Max Planck Institute, Germany; Pasteur Institute of Iran, Tehran, Iran; University College Dublin, Ireland; University Sains Malaysia, Malaysia and Ohio University, USA for faculty exchange, split and sandwich PhD as well as Postdoctoral training programs.

Faculty Members
Professors
- Dr. Abid Azhar (Mentorship Professor & Director General, Dean, Faculty of Science)
- Dr. Syed Irfiq Ali (Professor Emeritus)

Associate Professor
- Dr. Shah Ali Ul Qader

Assistant Professors
- Dr. S. M. Shahid
- Dr. SaddiaGalani
- Dr. Asheen Aman
- Dr. SirwatZehra
- Dr. SaimaSaleem
- Dr. SyedaQamar Un Nisa
- Mr. Muhammad Hussain

Lecturer
- Dr. AsheenAnif
- Mr. Muhammad Hussain

Programs Available
- M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261180-2
Website: www.kibge.edu.pk
Email: kibge@kibge.edu.pk  fax: 021-34823886-7
Area Study Centre for Europe

For Europe

Introduction
The Area Study Centre for Europe, University Of Karachi was established along with five other Area Study Centres (situated in major state sector Universities of Pakistan) by an act of parliament (ASC Ac No XLV.1975) in 1975. The Centre is an autonomous institution, under the academic discipline of the University of Karachi, supervised by a Board of Governors. It is funded by the Federal Government.

The Centre is slightly isolated from the hustle and bustle of mainstream University departments. The centre provides a peaceful atmosphere for teaching and research at the MS/PhD level. Its MS course work programme in European studies spread over two semesters is designed to give students a thorough understanding of contemporary Europe. Besides traditional subjects like European history, philosophy and thought, the courses are now focused on the European Union, its politics, law, economics, external relationships and common foreign and security policy. Europe's relation with Pakistan, the Muslim world and the developing world are given particular importance.

The research findings of the Centre's own research staff are published in the form of books, monographs and profiles. The centre also publishes the bi-annual Journal of European Studies, which covers articles on contemporary European issues.

The Centre also offers courses in French, German and English languages at the certificate level and diploma in the French language.

Career Opportunities
The Majority numbers of the students after completing Course work get jobs in Teaching, Foreign Office, Think-Tanks, National/International NGOs, Print/Electronic Media.

Facilities
Well equipped Reference Library

Specific Research Areas
The Centre offers one year (2 semester) course work programme with core courses in European History, Contemporary European Political and Economic Institutions, Theory and Practice of European Integration, European Union Law, The European Union's Foreign Policy, Basic Course in Economics, Research Communication Skills and Research Methodology. After passing the one-year course work programme students become eligible for thesis writing.

Faculty Members
Professor
- Dr. Uzma Shujaat (Director)

Assistant Professor
- Dr. Tasneem Sultana

Senior Research Fellow
- M. Shaista Shafeen Zafar
- Munazza Nargis Kazmi

Programs Available
- M. Phil. Degree In European Studies
- Ph.D. Degree In European Studies
- German Language Certificate Course
- French Language Certificate Course
- Italian Language Certificate Course
- English Language Certificate Course
- French Language Diploma Course
- Italian Language Diploma Course

For Further Enquiry
Telephone: 99261300-6 Ext- 2310
Website: www.asce-ku.con
Marine Reference
Collection and Resource Centre

Introduction
The Marine Reference Collection and Resource Centre have been providing excellent facilities to the marine science community of Pakistan and regional countries. It supports marine biodiversity research through comprehensive taxonomic data on marine fauna and flora and is in fact one of the unique research and training facilities in the region with a mission emphasizing taxonomic research, conservation and education.

The centre, which has only been a feature of invertebrate taxonomic studies since 1967, has demonstrated an ability and agility in responding to the management and conservation of marine biodiversity in a national, regional and international context. MRC has a preeminent museum dedicated to inspiring curiosity and learning about the invertebrate fauna through its unparalleled collections, exhibits and research.

So far 32 research projects have been accomplished through national and international funding. And approximately 500 research publications are to the credit of centre including illustrated keys, monographs, books, proceedings etc.

The centre is linked with numerous international research organizations including; Expert-Centre for Taxonomic Identification (ETI) Amsterdam, Zoological Museum Amsterdam, Raffles Museum Singapore, Smithsonian and British Museum.

Career Opportunities
Fair opportunities are available for marine taxonomists in various teaching and research organization (Government and Non-Government).

Facilities
The centre has a carefully maintained Museum (repository) with more than 7000 specimen, Preservation room, Wet laboratory to conduct research on live specimen, Ichthyology and Pollution lab, Mangrove lab, Molluscan lab, Plankton lab, SEM (Scanning Electron Microscope) room, Photographic lab, an Auditorium and Museum library with more than 3000 books, journals, reports, proceedings etc. A shore laboratory/Marine Research Station situated at Sandspit beach is also part of Marine Reference Collection and Resource Centre.

Specific Research Areas
The Centre supports marine biodiversity research through comprehensive taxonomic data on marine fauna & flora and thus offers research and training facilities in the region with a mission emphasizing on conservation and education.

• Survey, monitoring and assessment of coastal habitats and its biodiversity.
• Collection of fauna and flora from shores, offshore waters and harbors.
• Maintenance of collections-sorting, preserving and storing.
• Identification, documentation, registration and cataloguing.
• Publication of conclusions in the form of reports, monographs, illustrated keys, as well as presentation of papers at the national, international seminars/workshops, etc.
• Exchange of material as loan or donation.
• Services extended to local and foreign scientists, through providing advice and consultation on the management of biological resources of our seas.
• Research supervision/guidance for full/partial fulfillment of M.Sc., M. Phil. /Ph.D. degrees.
• Training of manager/scientists from government and non-government organizations.
• Planning and undertaking research projects.

Faculty Members
• Mr. Qadeer Mohammad Ali (In charge)
• Ms. Farhana Ghori
• Ms. Wafra Matanat Zaheen
• Dr. Kanwal Nazim (HEC Research Scholar)
• Dr. M. Uzair Khan (HEC Research Scholar)

Programs Available
• Post graduate research supervision
• Co- supervision of M. Phil./Ph.D. students

For Further Enquiry
Telephone: 021-99261645
021-99261300-06 Ext-2257
Website: www.mrrc@uok.edu.pk
Email: taxonomist@hotmail.com
Marine Sciences

Introduction
Institute of Marine Sciences (IMS) was established in 1981 to acquire greater knowledge of our marine environment and to develop a multidisciplinary approach to learn all aspects of the marine environment, ecological, biological and geological. Advanced knowledge of sea and skill in various fields of marine science is required for aquaculture, seafood, seaweed, seashells and pearl industry, oil and gas operators and Naval warfare. The Institute of Marine Science, Karachi University is best located for conducting research and teaching leading to Ph.D. degrees. IMS undertakes research in marine science including ecological, biological, biochemical, chemical, geological studies on marine life of Northern Arabian Sea.

Marine resources of Pakistan are still untapped which must be given due attention to contribute greater share in economic growth of Pakistan. Without requisite expertise in various fields of marine sciences it is not possible to exploit the immense wealth of our productive, rich coastal zone and continental shelf.

Career Opportunities
- Marine Fisheries Department and Fish Processing Industries
- Costal Development
- Teaching departments and institutes of colleges and universities
- Marine observatories
- PCSIR Lab.
- IUCN.WWF
- Environmental Protection Agency (EPA)
- National Institute of Oceanography
- Fisheries Harbor Authority
- Naval Hydrography and Shipping Industries
- Wildlife Department
- Foods and Resource Economics
- Medicine Companies
- Salt Industries
- Forestry Departments
- Middle East and Far East countries where aquaculture and industries related to marine resources are highly developed.

Facilities
The institute has computer and internet facility, which provide access to digital library of University of Karachi as well as various scientific data basis. Software packages are also available which enable collection of relevant background literature and statistical analysis of large data sets.

Specific Research Areas
- Ecological studies of marine organisms in different coastal areas of Karachi and Baluchistan
- Taxonomy of different marine organisms
- Chemical and Biochemical study of marine organisms, seawater and sediment
- Mariculture
- Marine plants
- Different kind of pollutants in marine environment
- Biodiversity in marine invertebrates and plants
- Study of seawater and sediment of Badin, Sindh

Faculty Members
Associate Professor
- Dr. Rashida Qari (Director)

Assistant Professors
- Dr. Ehsan Elahi Valeem
- Dr. Nuzhat Afzal

Lecturers
- Mr. Muhammad Shoab Kiani
- Ms. Nazia Arshad

Taxonomist
- Mr. Qaisar Abbas

Programs Available
- B.Sc.(Hons.)
- M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261300 Ext- 2378
Email: ims@uok.edu.pk
Centre for

Plant Conservation

Introduction
Centre for plant Conservation was established at the Karachi University with the funding of HEC. The Centre is divided into two major sections: (i) Botanic garden and (ii) The herbarium, Centre for plant Conservation is the hub of Academic and research activities. Herbarium is a fundamental source of identification of plants and permanent reference centre. It serves basic need of identification for basic and applied research in botany, biology, agriculture, pharmacy, genetics pharmaceutical chemistry, aerobiology and biotechnology. Aim of the Centre is to provide and promote facilities for advanced study and research in various aspects of plant conservation, plant systematic and ethno botany. It enhances the knowledge of plant conservation and sustainable utilization of plant biodiversity of rare and endemic plants of Pakistan and also provides opportunities for collaborative research with related department/ institutes.

Faculty Member
Professor
- Dr. Anjum Perveen (Director)

Career Opportunities
Students holding M. Phil./Ph.D. degrees from Centre for plant Conservation can apply in different academic and research institutions and scientific organizations

Facilities

Tissue culture Laboratory: well equipped laboratory is working to conserve the country's rare plant species, through in-situ as well as ex-situ conservation. Herbarium Library has more than 2000 books and 240 journals dealing on taxonomy for research scholars and students, and numbers of floras and monographs. Herbarium has more than 150,000 plants species (mostly flowering plants), including those which are several decades old. Scanning Electron microscope, seed Bank: has been established in the botanic garden, which contain seeds of more than 350 different species including wild, cultivated, ornamental and medicinal plants and many more are under process, internet facilities also available.

Specific Research Areas
Plant taxonomy, plant biodiversity, plant conservation, tissue culture, germ plasma storage, ethno botany

Programs Available
- M. Phil. (leading to Ph.D.)
- Ph.D.

For Further Enquiry
Telephone: 99261300-6 Ext- 2557,2371
Institute of
Environmental Studies

Introduction
The subject of environment is multidisciplinary in nature. The solution of environmental and related problems therefore requires the efforts of social scientists, health care personnel, engineers, microbiologist, chemists, Biologists and agriculturists. Medical profession although very much concerned with the health of the community also but it alone can not effectively solve environmental health problems. Civil engineers although taught about the public health engineering courses but the lack the knowledge and expertise for solving the problems of environmental engineering involving the principles of biology, microbiology and chemistry etc.

The institute was established in 1982. This is the oldest and pioneering institute in the field of which is offering M. Phil. and Ph.D. degrees since then. Keeping in view the acute shortage of specialists it has started offering M.Sc. Postgraduate Diploma and Certificate courses since 1996. The institute provides excellent air-conditioned lecture hall, environmental laboratories, library and audiovisual facilities for the students. It is recognized as a technical focal point on Environmental Health Activities of WHO/EMRO and has been organized WHO sponsored Workshops related to various environmental health and pollution problems with the collaboration of the Ministry of Health.

Therefore, there is a need to evolve and develop a course at the post-graduate level, which will involve the elements and fundamental principles of medicine, engineering and science for the solution of environmental problems and issues with a practical approach for solving such problems of developing countries. In other words the proposed M.Sc., degree in Environmental Science will bridge the gap that exists between courses in Community Medicine and Public Health and Environmental Engineering.

Career Opportunities
After completing two years (4 semesters) degree Program of M.Sc. the graduates would be able to take up managerial, technical and consultative responsibilities in various industries, multinationals, civic agencies, consulting firms, public health laboratories and organizations, environmental regulatory bodies, educational and research institutions and environmental protection agencies (EPAs). The M.Sc. is the most appropriate and unique post graduate Program for the in-service professionals who have the above mentioned qualified and would like to improve and advance their professional skills. The lectures also will be directed and conducted by the adjunct international faculty especially from North America.

Facilities
The centre is equipped with advanced laboratories, updated libraries and modern equipment that helps in researching on the global issues.

Specific Research Areas
- Global Climate Change
- Climate change impacts in Pakistan
- Capable of designing and developing low cost waste water treatment and disposal systems for small and medium size communities.
- Agriculture sustainability through the use of treated waste water.
- Treatment of water for potable use
- Public health aspects of wastewater treatment, disposal and reuse.
- Wastewater reclamation technology in hot climate for agriculture and fish culture.
- Capable of developing environmental health programs for monitoring and surveillance of water supply and sanitation.
- Industrial pollution control and management.
- Environmental hygiene (food and water hygiene and safety)
- Environmental impact Assessment
- Marine Pollution and control
- Ecological studies
- Biodegradation of hazardous waste

Faculty Members
Professor
• Dr. Tariq Masood Ali Khan

Associate Professors
• Dr. Omm-e-Hani
• Dr. Moazzam Ali Khan (Director)

Assistant Professors
• Dr. Zafar Iqbal Shams
• Ms. Suraiya Jabeen

Lecturers
• Mr. Waqar Ahmed
• Ms. Noor Fatima

Programs Available
• B.Sc.(Hons.)
• M.Sc.
• M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261300-06, Ext-2305
99261386 (Direct)
Institute of Sustainable

Halophyte Utilization

Introduction
ISHU was established with funding from HEC to work on various aspects of naturally occurring salt tolerant plants or halophytes. The aim is to serve humanity by utilizing these plants as a source of fodder, forage, biofuel, oil seeds, medicine plants etc. in harmony with nature.

Career Opportunities
ISHU graduates can apply for teaching positions in public and private colleges & universities and also in research and development organizations related to plant sciences.

Facilities
ISHU has state of the art facilities for research in lab, green house and nature field conditions such as Atomic absorption spectrometer, CNS analyzer, GC-MS, HPLC, Ion Chromatograph, Gels Doc system, PCRs, Photosynthesis and water relations instruments etc.

Specific Research Areas
Major areas of study focus on Ecology, Ecophysiology, Biochemistry & Molecular Biology as well as utilization of 'Halophytes' as food, fodder, biofuel, biodiesel, edible oil, medicinal and plants for landscaping.

Faculty Members

Associate Professor
• Dr. Bilquees Gul (Director)

Assistant Professors
• Dr. Salman Gulzar
• Dr. Irfan Aziz
• Dr. M. Zaheer Ahmed
• Dr. Abdul Hameed

Research Officers / Coordinator
• Mr. Zainul Abideen
• Mr. Muhammad Qasim
• Mr. Tabassum Hussain
• Dr. Riazuddin Ansari

Programs Available
• M. Phil./Ph.D. in Botany (ISHU)

For Further Enquiry
Telephone: 99261317, 32044350
99261300-06 Ext- 3333
Website: www.halophyte.org
Institute of
Space & Planetary Astrophysics

Introduction
Space technology acts as a catalyst for uplifting the economy of a country. Space technology is being used for dynamic traffic information, air traffic control, navigation, communication via satellite (GNSS), natural resource monitoring, precision agriculture, telemedicine, planning and management of land use, mining, public safety and disaster management and understanding important geophysical phenomena like earthquake or tsunami.

Education and research in space science is an integral part of the Institute of Space and Planetary Astrophysics (ISPA). University of Karachi. The main objective of the institute is to carry out basic and applied research in the fields of Space Science. ISPA has already produced quality research work in diversifies areas such as: computational astronomy, space antennas, star formation, early visibility of crescent moon and galactic astronomy, ionospheres, aerosol variability, ozone depletion, climate variability, flood risk assessment, etc. The most of the research is carried out with particular reference to indigenous problems. Currently we are also expanding our scope to fields like cosmology, astrophysical plasma, computational astrophysics, radio astronomy and other areas.

We have been offering admission to M.Sc., M.Phil. and Ph.D. programs. Some important courses of M.Sc. (Space Science) program are Astronomy, Astrophysics, Space Flight Dynamics, Space and Satellite Communication, Navigation & Space Instrumentation, Foundation of Remote Sensing, Geographical Information Science (GIS). Database and Computer Programming, Numerical Computing, Atmospheric Science, Solar, Ionospheric Physics, etc.

Career Opportunities
Our graduates of M.Sc. in Space Science will have job openings in organizations like SUPARCO, NESCOM, National Institute of Oceanography, Civil Aviation Authority, PIA, Pakistan Meteorological Department, National Telecommunication Corporation, Pakistan Telecommunication Corporation Ltd., Sui Southern Gas Company and Oil and Gas Development Ltd. etc. Students, with their computing and data analysis skills, can also pursue careers in programming, data analysis, game development and other related areas.

Facilities
The institute provides all academic facilities to the students. The institute has a Seminar Library with 1000 titles. We also provide facilities of Digital Library to every student of ISPA. It has the following Labs:
- ISPA Astronomical Observatory (equipped with a 6 inch refractor telescope of German made)
- Computational Astronomy Lab
- Remote sensing and GIS Lab
- GPS Lab

Specific Research Areas
- Geo-Space Science (Atmospheric Sciences, Upper Atmospheres, etc.)
- Computational Astronomy / Astrophysics
- Space Flight Dynamics & Aerodynamics
- Global Navigation Satellite System (GNSS)
- Satellite Communication / Space Antennas
- Remote Sensing and GIS

Faculty Members
Assistant Professors
- Dr. Muhammad Shahid Qureshi
- Dr. Muhammad Jawed Iqbal (In charge)
- Mr. Mirza Jawwad Baig
- Mr. Naem Sadiq

Lecturers
- Mr. Muhammad Anas Qureshi
- Mr. Syed Fayyaz Ur Rasheed
- Mr. M. Saleem Khan

Programs Available
- M.Sc. (Space Science)
- M.Phil./Ph.D.

For Further Enquiry
Telephone: 99261300-6, Ext. 2443
Website: www.halophyte.org
Pakistan Study Centre

Introduction
Pakistan Study Centre was established under an Act of the parliament passed in 1976. The Centre began functioning in 1983 and since then it has developed into a prestigious institute of higher learning and research. Apart from conducting courses at Masters, Ph.D., levels, the Centre has excelled in original in-house and contractual research that has received wide acclaim both at the national and international levels. Its research journal Pakistan Perspectives is regarded as one of the most prestigious journals of social sciences published in Pakistan. It has also been approved by the Higher Education Commission (HEC) as 'y' category journal whose articles are accepted for academic promotions. The Centre has the privilege that one of its alumni Dr. Muhammad Ali Siddiqui earned that D.Litt. degree while Prof. Sharif al Mujahid, a renowned scholar of international repute was designated as the Distinguished National Professor associated with the Pakistan Study Centre.

The Centre has also organized numerous international and national conferences apart from regular in-house seminars and symposia.

The Master's program of the Centre is based on a multi-disciplinary course which enables the students to compete in the civil service examination and also seek place in the teaching profession.

Career Opportunities
A Masters in Pakistan Studies is so trained that he/she may compete for any exam or test held for a post with a Master’s degree requirement, with utmost confidence. The Masters of Pakistan Studies have also found places in civil service, faculties of universities & colleges.

Facilities
The Centre provides all academic facilities to the students. It has an excellent library with over 16,000 titles. The library also houses a number of personal collections belonging to Prof. Hamza Alavi, renowned journalist and author Zamir Niazi. Prof. A.B.A Haleem, Critics Munir Shinn and Samad Shaheen, senior journalist and literary figure Hasan Abidi, Dr. Aquila Kiani and Prof. Dr. S. H. M. Jafri. As per rules the Centre allows full and half freeships in the tuition fee to the deserving students. Students are also facilitated in conduction of study tours of historical place and archaeological sites.

Specific Research Areas
- History and Historiography of Pakistan.
- Sufism and Islamic Modernism.
- Constitution and Political Development in Pakistan.
- Social Change in Pakistan.
- Literature, Art and Architecture in Pakistan.
- International Affairs with special reference to Pakistan.
- Political Economy of Pakistan.

Faculty Members
Professor
- Dr. Syed Jaffar Ahmed (Director)

Assistant Professors
- Dr. Anwar Shaheen
- Ms. Navin G. Haider

Lecturers
- Ms. Sadaf Masood
- Mr. Yasar Hanif

Programs Available
- M.A. (Pakistan Studies)
- M. Phil. (Pakistan Studies)
- Ph.D. (Pakistan Studies)
- D.Litt. (Pakistan Studies)

For Further Enquiry
Telephone: 99261300-06, Ext-2402
Website: www.uok.edu.pk
Centre of Excellence in

Marine Biology

Introduction
The Centre of Excellence in Marine Biology (CEMB) offers M. Phil, M. Phil leading to Ph. D & Ph. D. Program in Marine Biology. CEMB was established in the year 1975 under the Centre of Excellence Act of 1974. It is administrated by a Board of Governors whose Chairman is the Vice-Chancellor of the University of Karachi. The Director is the executive & administrative head of the Centre. The Board of Advanced Studies & Research and the Academic Council of the University of Karachi approve the academic program of the Centre. The degrees are awarded by the University of Karachi.

Career Opportunities
Opportunities for M. Phil & Ph.D. degree holders are available in different National/International research institution and other departments. Federal Marine Fisheries Department, Sindh & Baluchistan Fisheries Departments, National Institute of Oceanography, Institute of Marine Sciences, University of Karachi, and Fishery Industry are key organizations one can consider for job opportunity. Teaching at government / public sector degree colleges & Universities and foreign research institutions are another sector that absorbs CEMB graduates.

Facilities
- Lecture room with audiovisual support system.
- Laboratories equipped with latest scientific equipment.
- Internet access to students.
- Research Library with huge collection of books, national and international journals and other research materials.
- Teaching museum containing specimens of 500 fishes & 200 invertebrates species.
- Facility to rear live animals for student research.
- Fish Hatchery at Dam, Sonmiani provide facility for aquaculture.
- Transport facility for field surveys along Sindh and Baluchistan coasts.

Specific Research Areas
Aquaculture, Biochemistry, Chemistry, Ecology, Fisheries, Mangroves, Microbiology, Physical Oceanography, Planktology, Seaweeds, Shellfisheries, etc.

Faculty Members
Professor
- Prof. Dr. Pirzada Jamal A. Siddiqui (Director)

Associate Professors
- Dr. Zarrien Ayub
- Dr. Ghazala Siddiqui
- Dr. Munawwer Rasheed

Assistant Professors
- Mrs. Furqana Chaghtai
- Mrs. Safia Khanum
- Dr. Ghulam Abbas
- Dr. Noor-us-Saher
- Dr. Nafisa Shoib
- Dr. Seema Shafique
- Dr. Sher Khan Panhwar
- Dr. Faiz Muhammad

Lecturers
- Ms. Zaib-un-Nisa Burhan
- Mr. Amjad Ali

Programs Available
- M. Phil./Ph.D.

For Further Enquiry
Telephone: 99261551, 99261397
Fax: 99261398
PABX: 99261300-06 Ext- 2256
Website: www.cemb-ku.edu.pk
Email: cembku@gmail.com