U.S. - Pakistan

Centers for Advanced Studies in Water

Student Profiles

(2015 Batch)

MEHRAN UNIVERSITY
of Engineering & Technology
Jamshoro, Sindh, Pakistan

THE UNIVERSITY OF UTAH

U.S. - Pakistan Center for Advanced Studies in Water

Introduction:

U.S. - Pakistan Center for Advanced Studies in Water (USPCAS-W) has been established at Mehran University of Engineering and Technology (MUET) Jamshoro, with support from American People through the United States Agency for International Development (USAID) Pakistan under the Cooperative Agreement signed with USAID on December 12, 2014 for five years. The University of Utah, USA, is the partnering university providing technical assistance for advancing the development and sustainability of the Center. The tangible deliverables of the Center include postgraduate degree programs, applied policy research, facilitation of public-private partnerships, and provision of policy advice in a range of water related disciplines.

Main purpose of the applied research component is to deliver relevant and innovative research to meet the needs of industry, civil society and government.

Vision

To establish a world class education and research center dedicated to solving water related problems of Pakistan and to develop strong and productive liaison with local and international organizations aiming to support Pakistan' economic development.

Mission

To train present and future faculty, young scientists, engineers, managers and other stakeholders with state of the art techniques and cutting edge knowledge in the water sector. Through collaboration with academia, government and industry we will pursue applied research solutions to water sector problems and bring about policy reforms aiming to strengthen economy of Pakistan.

USPCAS-W

save water save life

Message from the Vice Chancellor

It is indeed a special day in the life of students when they harvest the fruit of their efforts over the years in the form of conferment of degrees. And it is also a special day for the parents as well as for the faculty who can all feel proud of their achievements. As a Vice Chancellor of this university, I feel pleasure to extend heartiest greetings and congratulations to all those who would be receiving their degrees and outstanding performance awards at the first ever Graduation Ceremony after the establishment of the US-Pakistan Center for Advanced Studies in Water (USPCAS-W). I share the moments of happiness and joy with you, your parents and the faculty who contributed to lead you to this status.

I wish to draw your attention to the fact that it is not only degree that goes with you. There is vast learning experience and exposure gained during your student life - that will continue to be an important guide for you in shaping up your future. I urge all the passing out graduates to make informed decisions about their future and to utilize their knowledge and skills for solving the water-related problems of the society at large, and contribute to the sustainable development goals and economic uplift of the country. It is highly satisfying to note that 80% of the graduating students have been already hired by the relevant organizations and at least three students have been selected for PhD scholarships in USA under Fulbright and other programs. This speaks of the program strengths in terms of curriculum, exposure to and understanding of water-related issues and challenges, quality of student mentoring, and technical/ professional learning experiences while at the University of Utah.

On this occasion, I wish to recognize the pivotal role played by United States Agency for International Development (USAID) for their financial support, including this building where the center is housed and scholarship support to the students, the University of Utah (UU) for their continuing technical support in all the matters including capacity building, to HEC for their overall support, to the Government of Sindh for funding support for girls hostel and many other spheres of the development of the Center. I also wish to recognize the dedicated efforts of Center's faculty, administration and the support of Utah University's team in leading this center to the point of national center.

Once again, I convey my warmest congratulation to the graduating students and urge them to share their skills and experience in solving water-related problems of the society where you will be rewarded for your competence and devotion as you confront life's daily challenges. I express my thanks to the parents and guardians for their support and sacrifice. I pray for the success and happiness of the students receiving their degrees.

Prof. Dr. Muhammad Aslam Uqaili
Vice Chancellor
MUET

Message from the Chief of Party

On behalf of the University of Utah (UoU), USA, I would like to extend my warmest congratulations to the graduating class of 2015. With the financial support of USAID, we started this journey of establishing the US-Pakistan Center for Advanced Studies in Water together in early 2015. Today it gives me an immense pleasure to see that our first batch of students is entering into the water management profession after successful completion of their academic journey.

The UoU has been very proud of its academic and research partnership with the Mehran University of Engineering and Technology, Jamshoro. Main thrust of this partnership continues to be on strengthening technical and institutional capacities of the Center through reforming curriculum, improving governance, implementing policy oriented research agenda, and training and mentoring of both faculty and students. This effort is continuing, and the larger partnership between two universities had given birth to several individual-level partnerships between US faculty and Center's faculty and students. This is an important step towards enhancing Center's sustainability.

Many of the students graduating today have spent one semester at the University of Utah, where they were exposed to a very specialized training program, including exposure to social cultural activities. The students benefitted from the exchange program in a variety of ways. For example, some of the students graduating today have already been accepted in leading US universities for PhD degree programs. A good number have already received job offers from public and private sector organizations. Based on the feedback received from the visiting faculty and students, we at the UoU are continuously aspiring to improve the quality of our exchange program.

For all of you graduates, today is a special day in your lives. A major milestone has been achieved, and yet it is a beginning of a new journey. I am sure your newly acquired education will serve you well throughout this journey. Be proud of what you have worked to achieve and remember those who have supported you to meet this important goal.

Last but not least, I would like thank the faculty of UoU and US-PCASW who have served your teachers and mentors during the last two years. They have given you the tools to pursue your professional dreams; how you choose to use those tools is now in your hands. I wish you every success as you enter this next exciting stage of your career, and very much hope that you will remain connected with the Center.

Dr. Muhammad Aslam Chaudhry
Research Professor (Economics) and Chief of Party
U.S.-Pakistan Center for Advanced Studies in Water
University of Utah, USA

Message from the Project Director

At the outset, I feel proud that the first batch of students is passing out from the Center for Advanced Studies in Water. The center was established in Mehran University of Engineering & Technology Jamshoro, Sindh, Pakistan with the generous support of American people through United States Agency for International Development (USAID). The students of this batch were enrolled in August 2015 and constitute first product of the center entering into market as an ambassador of the center.

The Center feels fortunate enough that University of Utah, USA is the partner University for providing technical support in academic, research and capacity building programs. As a partnering university, the University of Utah and its academic and professional teams work jointly with us for growth and development of the Center and to ensure quality programs for the graduating students and the faculty. Besides, the students are also provided an opportunity of spending one semester at the University of Utah or other partnering university in the USA under exchange program for capacity building, applied research, and for exposure to the US education system.

Irrespective of the background, gender, color, and caste, all the students joining the Center are provided financial support to enable them to focus on their studies instead of worrying about their education and living expenses. The Center works very closely with the students as to ensure enabling education environment and enriching social, cultural and extra-curricular activities. Concisely, the center presents a unique learning environment entirely focused on Pakistan's water-related issues and their solution for sustained economic growth.

In last, I wish all graduating students a rewarding career and the opportunities to prove their capabilities in the field and contribute in resolving the Pakistan's water-related challenges in different disciplines.

Prof. Dr. Bakhshal Khan Lashari
Project Director
USPCAS-W – MUET

EnvEng

Environmental Engineering

The environmental engineering emphasizes learning in physical, chemical and biological processes, water and wastewater treatment design, air and noise pollution and control, hazardous and solid waste management, and environmental impact assessment.

Zohaib Nizamani

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-01
Email:	nizamani.zohaib@gmail.com
Present Address:	B-15 Naseem Delux Banglows, Qasimabad, Hyderabad

Research Project Title:

Environmental Impacts of Rice Production Systems in Sindh Province Using Life Cycle Assessment (LCA) Approach

Research Objectives

- To evaluate the potential environmental impacts of rice production systems in Sindh province.
- To analyze the economic performance of rice production systems in Sindh province.
- To assess rice production practices focusing on least environmental impacts and better economic performance.

Name of Supervisor:	**Dr. Asmatullah** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Mr. Muhammad Ali** Assistant Professor, USPCAS-W, MUET, Jamshoro

Hammad Malik

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-02
Email:	m.malik.hammad@gmail.com
Present Address:	28-E Askari-5 Malir Cantt, Karachi

Research Project Title:

Synthesis of Polyacrylonitrile and Magnetite Nanofiber for Heavy Metal Removal

Research Objectives

- Synthesis of polyacrylonitrile (PAN) and magnetite nanofiber adsorbents.
- Estimation of the removal of lead (Pb2+) ions using the PAN and magnetite nanofibers adsorbents.
- Determining the optimum conditions for adsorption of lead (Pb2+) ions.
- Checking reusability of the nanofiber.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Zeeshan Khatri** Professor, Mehran University, Jamshoro

Hiba Muzammil

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-03
Email:	urs_hiba@yahoo.com
Present Address:	Defence Garden View Apartment Flat # 7 Fourth Floor Hyderabad

Research Project Title:

Socio Econamic and Health Impact Assessment of Environmental Degradation of Manchar Lake

Research Objectives:

- To determine the impact of Manchar lake water degradation on the socioeconomic conditions of the people living near the lake.
- To assess the impact of Manchar lake water on the health of people.
- To suggest mitigation measures to improve the health and socio economic conditions of people dependent on the lake.

Name of Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Asmatullah** Assistant Professor, USPCAS-W, MUET, Jamshoro

Bushra Danish Talpur

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-04
Email:	bushra.d.talpur@gmail.com
Present Address:	Flat No. C303, block C, Abdullah Palace, Qasimabad, Hyderabad

Research Project Title:

Analysis of Environmental Impacts of Buildings: through life Cycle Assessment (LCA)

Research Objectives:

- To assess and compare the environmental impacts of green and conventional building scenario.
- To estimate and compare economic cost of green and conventional building.
- To suggest resources conservation strategies in buildings based on LEED reference guidelines.

Name of Supervisor:	**Dr. Asmatullah** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Mr. Muhammad Ali** Assistant Professor, USPCAS-W, MUET, Jamshoro

Muhammad Hammad Siddiqui

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-06
Email:	hammad_siddiqui@live.com
Present Address:	House# 1 Unit# 2, Near Shah Bhitai Hospital Latifabad, Hyderabad

Research Project Title:

Characterization of Polycyclic Aromatic Hydrocarbons in the Surface Water and Sediment of Left Bank Canals of Kotri Barrage in Hyderabad

Research Objectives:

- Synthesis of polyacrylonitrile (PAN) and magnetite nanofiber adsorbents.
- Estimation of the removal of lead (Pb2+) ions using the PAN and magnetite nanofibers adsorbents.
- Determining the optimum conditions for adsorption of lead (Pb2+) ions.
- Checking reusability of the nanofiber.

Name of Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro

Sultan Shaikh

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-07
Email:	sultan11civil@gmail.com
Present Address:	Flat No.2/6 Abdullah Corner, Wadhu Wah Road, Qasimabad, Hyderabad

Research Project Title:

Exploring Groundwater Quality in the Areas Surrounding Manchar Lake for Drinking Purpose

Research Objectives:

- The overall objective of this research is to identify locations where potable water may be found that can be used for drinking purposes.

Name of Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro

Faaiz Rafique Memon

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-09
Email:	faaizmemon1@gmail.com
Present Address:	A/1714 Market Tower Road Hyderabad

Research Project Title:

Optimization of Pilot-Scale Trickling Filter for Wastewater Treatment at MUET, Jamshoro

Research Objectives:

- To quantify the amount of wastewater being generated from Civil, CRP and IEEM departments.
- To characterize the wastewater quality prior to treatment by analyzing its physic-chemical parameters.
- To optimize the depth of media and hydraulic loading rate in the trickling filter for the effective removal of contaminants from wastewater.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Ashfaque Ahmed Pathan** Professor, Mehran University, Jamshoro

Kaleemullah

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-10
Email:	engrkaleemullah@ymail.com
Present Address:	A/64 Faraz Villaz Phase III Wadhoo Wah Road Qasimabad, Hyderabad

Research Project Title:

Dispersion Modeling of Emissions from Thermal Power Station Jamshoro and Human Health Risk Assessment

Research Objectives:

The overall objective of this study is to assess the human health risks associated with the air emission from the Thermal Power Station Jamshoro. Specific objectives are:

- To determine concentration of air pollutants emitted from Thermal Power Station Jamshoro.
- To assess human health risk from air pollutants emitting from the Thermal Power Station, Jamshoro

Name of Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro

Azizullah

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-12
Email:	petroleum.aziz@gmail.com
Present Address:	C-19/5 Seetanagar, Near PCSIR Lab, University Road, Karachi

Research Project Title:

Assessment of Chemical Parameters for Detecting the Quality of Drinking Water at Mehran University of Engineering & Technology, Jamshoro

Research Objectives:

The aim of study is to determine the levels of the selected trace heavy metals and other chemical indicators in water and sediments of Water Treatment Plant at Mehran University storage, distribution and main raw water source i.e. KB feeder.

- To determine the concentration of chemical parameters including Chloride, Alkalinity, Hardness, Sulfate, Nitrate, Fluoride and trace metals lead, Zinc,

Name of Supervisor:	**Dr. Syeda Sara Hassan** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Abdul Khalique Ansari** Professor, Chemical Engineering, QUEST, Nawabshah
Name of Co-Supervisor:	**Dr. Nusrat Begum Jalbani** Centre of Environmental Studies, PCSIR Laboratory, Karachi

Farhan Wahid

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-14
Email:	farhanwahid13@gmail.com
Present Address:	Qalandar Shahbaz Medical Store, Barecha Chowk, Kotri, Jamshoro

Research Project Title:

Performance Evaluation of Drinking Water Interventions in Chachro

Research Objectives:

- To identify all the drinking water interventions in Chachro, Tharparkar.
- To evaluate the performance of drinking water interventions in Chachro, Tharparkar through water quality testing.
- To know the perspective of the local people about the drinking water interventions.

Name of Supervisor:	**Mr. Muhammad Ali** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Rafique Ahmed Chandio** Professor, Economics Department, University of Sindh

Muhammad Awais

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-15
Email:	magsiawais93@gmail.com
Present Address:	R-16 Ayub Goth SUPARCO Road Near PCSIR Lab Gulshan-e-Iqbal Karachi

Research Project Title:

Disinfection of Antibiotic Resistant Bacteria in the Water of Hyderabad City by Using Different Disinfectants

Research Objectives:

- To disinfect antibiotic resistant bacteria (ARB) present in the waters of Hyderabad City by using different disinfectants.
- To optimize the dose of disinfectants responsible for efficient removal of antibiotic resistant bacteria (ARB) present in the waters of Hyderabad City.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Zulfiqar Merani** Senior Scientific Officer, PCSIR Lab, Karachi

Maheen Saeed

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-17
Email:	maheensaeed65@yahoo.com
Present Address:	C/104 Kohsar Housing Society Phase II

Research Project Title:

Fresh Water Quality Assessment Around Kotri Barrage

Research Objectives:

- To assess water quality by collecting primary and secondary data of fresh water sources upstream and downstream of Kotri Barrage.
- To measure the concentrations of drinking water quality (physical, chemical parameters and heavy metals) and sediments (heavy metals) upstream and downstream of Kotri barrage.
- To evaluate seasonal variations in water quality of the River Indus at selected locations.
- To compare water quality data with national and international drinking water quality standards.

Name of Supervisor:	**Dr. Abdul Khalique Ansari** Professor, Chemical Engineering, QUEST, Nawabshah
Name of Co-Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro

Sadaf Sher

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-18
Email:	princessofcivil23@gmail.com
Present Address:	Junejo Muhallah, Radhan Station, Taluka Mehar, District Dadu

Research Project Title:

Evaluating the Capacity of Keenjhar Lake to Meet Various Demand

Research Objectives:

- To develop a water balance model of Keenjhar Lake.
- To evaluate Keenjhar Lake's capacity to meet future water demands for Karachi.

Name of Supervisor:	**Dr. Kamran Ansari** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Salim Khoso** Assistant Professor, QUEST Engineering College Larkano

Danyal Aziz

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-19
Email:	engr.danyalaziz@gmail.com
Present Address:	45 Sector C-1 ILM Road Phase 5 Hayatabad Peshawar

Research Project Title:

A System Dynamic Model for Water-Energy-Food Nexus in Context of Pakistan

Research Objectives:

- Develop a causal loop diagram and stock-flow model to link the parameters of the WEF NEXUS in the context of Pakistan's use of resources,
- Quantify the effects of population growth and water availability uncertainty on water, energy and food security,
- Evaluate the capacity to achieve Sustainable Development Goals SDGs related to water, energy and food using various scenarios modelling.

Name of Supervisor:	**Mr. Waqas Ahmed** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Rashid Rehan** Associate Professor, UET, Peshawar

Shoaib Ahmed

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-20
Email:	shoaib.qureshi22@gmail.com
Present Address:	Venus Boot House Shahi Bazar Larkana Sindh

Research Project Title:

Effluent Treatment of Biodigested Spent Wash Using Coal Fly Ash

Research Objectives:

- To optimize suitable operating conditions for maximum colour and COD removal using indigenous fly ash adsorbent (pH, adsorbent dose, contact time, particle size and initial concentration)
- To investigate adsorption isotherms for adsorption of colour (melanoidins) and COD (Langmuir and Freundlich isotherm models).
- To investigate adsorption kinetics for adsorption of colour (melanoidins) and COD (pseudo-first and pseudo-second order kinetic models).
- To simulate a packed adsorption column for distillery effluent (spentwash) in order to optimize flow rate, initial concentration and bed height.

Name of Supervisor:	**Dr. Abdul Khalique Ansari** Professor, Chemical Engineering, QUEST, Nawabshah
Name of Co-Supervisor:	**Dr. Farman Ali Shah** Chairman, Chemical Engineering, MUET, Jamshoro

Saira Halepoto

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-21
Email:	saira.halepoto10ee@gmail.com
Present Address:	259 & 260, Mustafa Colony, Tando-Allahyar

Research Project Title:

Evaluation of Drinking Water Quality of Hyderabad City

Research Objectives:

- To evaluate the drinking water quality in Hyderabad city for physicochemical and biological
- Characteristics
- Identification of causes of contamination level and suggest mitigation measures

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Sheeraz Ahmed Memon** Director, Institute of Environmental Engineering, MUET, Jamshoro

Sohail Raza

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-22
Email:	sohailangah@gmail.com
Present Address:	D-19 Gullistan-e-Sajjad, Qasimabad, Hyderabad

Research Project Title:

Strategic Environmental Assessment for Sustainable Water Resource Management in Sindh Province

Research Objectives:

- The overarching objective of this study is to propose the water sector-SEA framework from critical factors through A'WOT (SWOT-AHP) analysis for lower IRB.
- The specific objectives are,
- i)To identify critical factors for the sustainable water resource management of lower IRB through SWOT-AHP analysis.
- ii) To suggest the water sector-SEA framework for lower IRB by integrating the critical factors from SWOT-AHP study.

Name of Supervisor:	**Mr. Awais Anwar Chandio** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. M. Muneer babar** Professor, USPCAS-W, MUET, Jamshoro

Asad Ali

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-23
Email:	asad.laghari@live.com
Present Address:	B-38 Gospel Homes Near Sonheri Bookland Qasimabad Hyderabad

Research Project Title:

Identification of Antibiotic Resistant Bacteria in the Drinking Water Sources of Hyderabad City and its Surroundings

Research Objectives:

- To find Antibiotic resistant bacteria present in the waters of Hyderabad City and its surroundings.
- To find out the potential health hazards associated with the identified antibiotic resistant bacteria from that water.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Zulfiqar Merani** Senior Scientific Officer, PCSIR Lab, Karachi

Hafeez Khoharo

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-24
Email:	khoharohafeez@gmail.com
Present Address:	A-84, Hyderabad Bungalows, Qasimabad, Hyderabad, Sindh, Pakistan

Research Project Title:

Assessment of Persistent Organic Pollutants (POPs) in Manchar Lake and Surrounding

Research Objectives:

- To Determine the POPs contamination level in Manchar Lake and its surroundings.
- To study the impacts of POPs on the Manchar Lake ecosystem.
- To recommend the mitigation measures according to POPs behavior in Lake.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Sheeraz Ahmed Memon** Director, Institute of Environmental Engineering, MUET, Jamshoro
Name of Co-Supervisor:	**Ms. Uzma Imran** Assistant Professor, USPCAS-W, MUET, Jamshoro

Iram Sifat

Degree Program:	Environmental Engineering
Roll Number:	15-EnvE-MS-25
Email:	eram.sifat@gmail.com
Present Address:	C/O Shah Naseeb, Public School & College Jutial, Gilgit

Research Project Title:

Treatment of Domestic Wastewater by Sustainable Microbial Fuel Cells with Simultaneous Electricity Generation

Research Objectives:

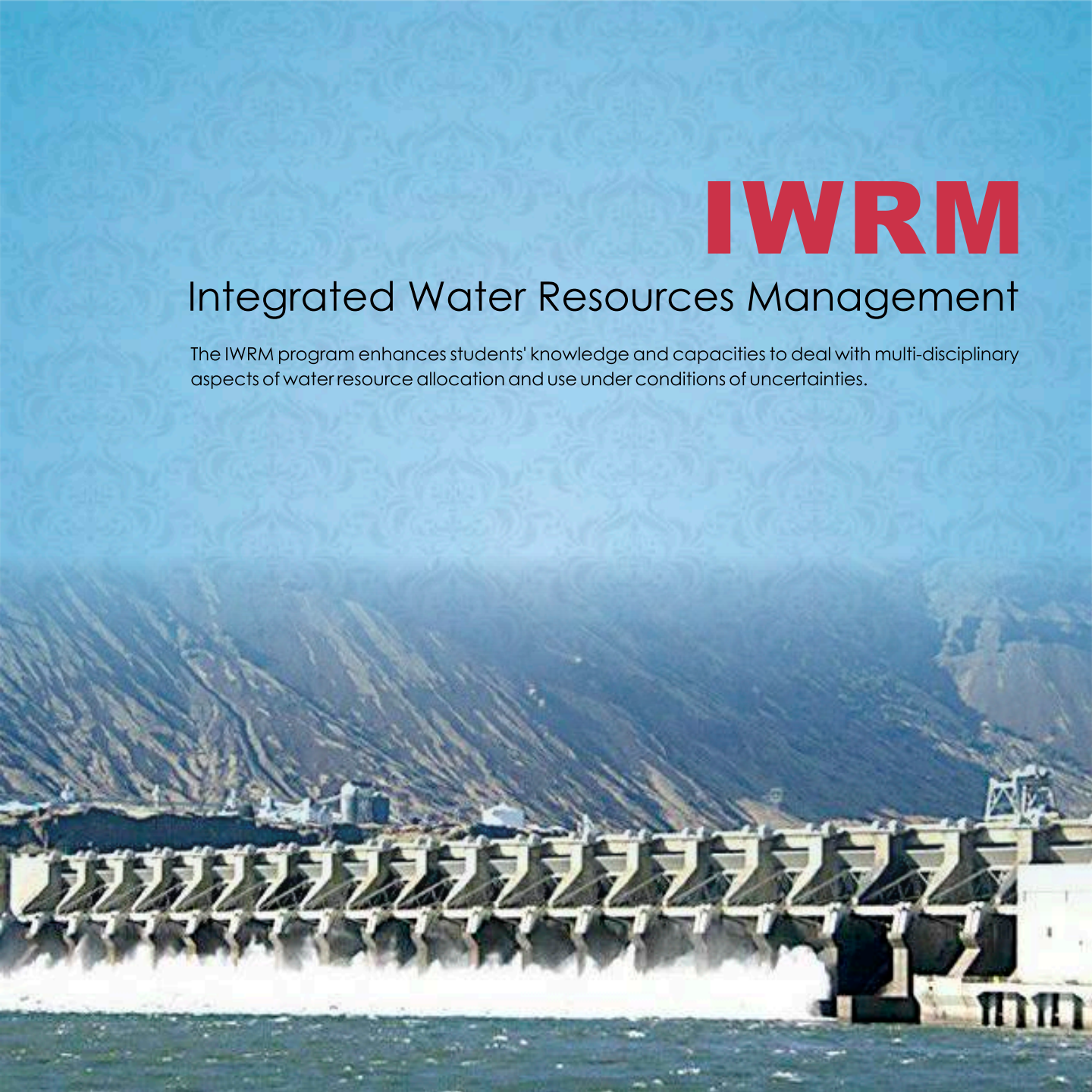
- To develop a lab-scale prototype of Single-Chamber MFC to explore the possibility of usage of Carbon Nano Tubes (CNT) based anodes in the treatment of domestic wastewater for dual purposes:
  - for wastewater treatment, and for bioelectricity production
- To evaluate the potential of electricity generation through MFC from domestic wastewater in typical Pakistani conditions.

Name of Supervisor:	**Dr. Rasool Bux Mahar** Professor, USPCAS-W, MUET, Jamshoro

IWRM

Integrated Water Resources Management

The IWRM program enhances students' knowledge and capacities to deal with multi-disciplinary aspects of water resource allocation and use under conditions of uncertainties.



Mansoor Ali

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-01
Email:	nizamani_143@yahoo.com
Present Address:	Village Rajo Nizamani Talka & Distt: Tando Muhammad Khan

Research Project Title:

Potential for Conjunctive Use of Surface Water and Groundwater in Rajo Nizamani, Sindh

Research Objectives:

- Study impacts of 'soil and water salinity' on crop yield.
- Study the unequal distribution of water in the study area of Rajo Nizamani with respect to crop yield.
- Find out the new surface to groundwater ratios for farmers to attain crop yield more than 5 tons/ha.

Name of Supervisor:	**Ms. Rakhshinda Bano** Assistant Professor, USPCAS-W, MUET, Jamshoro

Syeda Fatima Zehra Zaidi

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-02
Email:	fatimazaidi803@yahoo.com
Present Address:	71 Block # C Unit # 6 Latifabad, Hyderabad

Research Project Title:

Identifying Sustainability Indicator's Metrics for Safe Water Services

Research Objectives:

- To identify the existing conditions of Hyderabad's domestic water supply services and system.
- To determine the status and relevance of existing SDG 6.1 metrics, defined by the WHO and UNDP to Hyderabad, and identify new possible metrics for monitoring the safe and adequate water supply in the city.

Name of Supervisor:	**Ms. Rakhshinda Bano** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Mr. Waqas Ahmed** Assistant Professor, USPCAS-W, MUET, Jamshoro

Muhammad Nauman

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-03
Email:	naumanacademic@gmail.com
Present Address:	185, Street No: 01, Gharibabad, Hyderabad

Research Project Title:

Flood Modeling by Using TRMM Rainfall Product. GIS and HEC-HMS RAS. A Case Study for the Indus River Basin in Sindh Summer Storm Event 2011

Research Objectives:

- Hydrologic modeling using TRMM rainfall and HEC HMS to get flood peaks;
- Hydraulic modeling using HEC-RAS to get water surface elevations.
- Inundation mapping using GIS.

Name of Supervisor:	**Ms. Ghulam Hussain Dars** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Kamran Ansari** Professor, USPCAS-W, MUET, Jamshoro

Daniyal Hassan

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-05
Email:	daniyalhassan109@gmail.com
Present Address:	Ward No.2 Block 3 Near Hyder Educational Academy Sanghar

Research Project Title:

Assessment of Historical and Future Performance of the Pakistan Water Apportionment Accord-1991

Research Objectives:

- Given the pre-and post-accord values of the flows in the Sindh, how the water apportionment accord performed at users' satisfaction and reservoirs level?
- What new supply and demand management strategies will be needed to achieve sustainable allocation under the Accord?

Name of Supervisor:	**Ms. Rakhshinda Bano** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Kamran Ansari** Professor, USPCAS-W, MUET, Jamshoro

Sheva Ram

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-06
Email:	shevaram50@gmail.com
Present Address:	Shaman Dass General Store, Rajar Market, Mirpurkhas Road, Sanghar

Research Project Title:

Flood Analysis of Left Bank Outfall Drainage (LBOD): Using Remote Sensing and Hydraulic Modeling

Research Objectives:

- Flood Hazard mapping of 2011 floods along LBOD.
- Flood Damage Assessment of 2011 floods along LBOD.

Name of Supervisor:	**Mr. Waqas Ahmed** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Ms. Ghulam Hussain Dars** Assistant Professor, USPCAS-W, MUET, Jamshoro

Muhammad Touseef

Degree Program:	Integrated Water Resources Management
Roll Number:	15-IWRM-MS-07
Email:	engrtouseef3347@gmail.com
Present Address:	Village Manki Mohalla ADDA Tehsil Lahore District Swabi KPK Pakistan

Research Project Title:

Predicting the Climate Change Impacts on Future Precipitation Trends in Pakistan Using CMIP5 Climate Scenarios

Research Objectives:

- To downscale 08 GCMs which participated in the Coupled Model Inter-comparison Project Phase 5 under two emission scenarios of RCP 8.5 and RCP 4.5.
- To estimate the projected seasonal i.e. Summer (JJAS) and Winter (DJF) precipitation patterns.
- To estimate the projected differences in future (2040-2070) and historic (1960-1990) simulations.

Name of Supervisor:	**Ms. Ghulam Hussain Dars** Assistant Professor, USPCAS-W, MUET, Jamshoro

HID

Hydraulics, Irrigation and Drainage

The HID program educates students in the field of open channel and groundwater hydraulics in combination with engineering principles and to support useful plant life, with minimum degradation of soil and water resources.

Muhammad Naseer Rais

Degree Program:	Hydraulics, Irrigation and Drainage
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Research Project Title:

Estimation of Evapotranpiration and Potential Water Consumption By Different Crops at Canal Command Level: A Case Study of Indus Basin Irrigation System

Research Objectives:

- To determine Crop Evapotranspiration need of different crops at Canal Command Level, for estimation of Agricultural water Demand.
- Estimate the supply and demand gaps of the system.

Name of Supervisor:	**Mr. Waqas Ahmed** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Ms. Rakhshinda Bano** Assistant Professor, USPCAS-W, MUET, Jamshoro

Rabia Dars

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Research Project Title:

Demarcation of Groundwater ror the Sustainable Development in District Matiari

Research Objectives:

- Demarcation and mapping of groundwater potential and its quality (Electrical Conductivity) using Resistivity Survey and Arc GIS in district Matiari.
- To conduct a survey for groundwater utilization and socio-economy parameters of farming community and to suggest recommendations for sustainable management in the study area.

Name of Supervisor:	**Dr. Altaf Ali Siyal** Professor, USPCAS-W, MUET, Jamshoro

Muhammad Halar Zaman

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Research Project Title:

Land Cover Changes and Urban Heat Intensity Mapping of Karachi

Research Objectives:

- Map the Urban heat island (UHI) for the city of Karachi
- Develop the relationship between air and land surface temperature, how would the relationship will help in identifying Urban heat island (UHI)
- Map the temperature trends in the Karachi caused by urban development
- Assess which area of Karachi heat intensified and needs to be relieved with vegetation cover and plantation

Name of Supervisor:	**Mr. Waqas Ahmed** Assistant Professor, USPCAS-W, MUET, Jamshoro

Moazzam Ali

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Research Project Title:

Application of GIS and HEC-RAS Infloods Forcasting: A Case Study of Lower Indus Basin, Sindh 2010

Research Objectives:

The main aim of this study is to minimize the damages due to flood and it will be achieved by accomplishing following two main objectives:

- To identify the most vulnerable points along the River Indus embankment.
- To verify the findings of this study with case study of 2010 floods.

Name of Supervisor:	**Dr. Kamran Ansari** Professor, USPCAS-W, MUET, Jamshoro

Aftab Ahmed

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Research Project Title:

Remote Sensing and GIS Application for Flood Management: A Case Study of Larkana Division

Research Objectives:

- To assess crop damage due to Floods 2010 in Larkana Division using satellite data
- To determine the impact of flood 2010 on Noraialised Difference Vegetation Index (NDVI) of the Larkana Division
- To prepare flood vulnerable map for Larkana division using DEM
- To recommend feasible flow path for safe disposal of flood runoff in case of any future river flood on right bank of the river

Name of Supervisor:	**Dr. Altaf Ali Siyal** Professor, USPCAS-W, MUET, Jamshoro

Abdul Basit

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Research Project Title:

Water Balance Study and Assessment of Groundwater Resources in Matiari Distributary Command Area: A Modflow Perspective

Research Objectives:

- To determine the aquifer parameters using AQTESOLV software so as to develop a strategy of the groundwater use.
- To estimate the water balance for the study area using Visual MODFLOW flex.

Name of Supervisor:	**Dr. Shafi Muhammad Kori** Professor, Civil Engineering Department, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Abdul Latif Qureshi** Professor, USPCAS-W, MUET, Jamshoro

Alina Usman

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Research Project Title:

Comparative Evaluation of Implementing Participatory Irrigation Mnagement (PIM) in Sindh Pakistan

Research Objectives:

- To evaluate the performance of Participatory Irrigation Management and Conventional Irrigation Management in water management at distributaries/minor's level.
- To assess Farmers' attitude towards Participatory Irrigation Management (PIM) in Sindh.

Name of Supervisor:	**Dr. Abdul Latif Qureshi** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Ali Asghar Mahesar** Deputy Director SBRP, Irrigation Dept. Government of Sindh

Hafiz Usama Imad

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Research Project Title:

Consumer's Willingness to Pay for Municipal Supplied Water: A Case Study of Hyderabad City

Research Objectives:

- To analyze willingness to pay for water services in the city
- To analyze WTP on income class variation and level of education
- To find the satisfaction level of people for the system and quality

Name of Supervisor:	**Mr. Muhammad Ali** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Asmatullah** Assistant Professor, USPCAS-W, MUET, Jamshoro

Dhanji Mal

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Research Project Title:

GIS-Based Decision Support System for Runoff Harvesting Potential Sites: A Case Study of Karoonjhar Mountainous Area

Research Objectives:

- To collect and analyze meteorological data of the Koroonjhar Mountainous area for Frequency Analysis
- To determine flow direction, flow accumulation, and delineation of the watershed using DEM of the area in ArcGIS
- To quantify rainwater harvesting potential and water conservation sites of Koroonjhar Mountains using HEC-HMS.

Name of Supervisor:	**Dr. Altaf Ali Siyal** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Mr. Ghulam Hussain Dars** Assistant Professor, USPCAS-W, MUET, Jamshoro

Shamotra

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Research Project Title:

Farm-Based and Model-Based Evaluation of Sustainable Alternative Irrigation Practices for Water Conservation

Research Objectives:

- To Simulate efficiencies of conventional (flood irrigation) and alternative irrigation practices (furrow, alternate furrow, and raised bed).
- To evaluate the changes in yield and water saving on wheat crop to compare alternative and flood irrigation.
- Perform analysis on capacity and economic for each water limiting scenario and suggest best irrigation system to growers for conservation of water at farm level.

Name of Supervisor:	**Ms. Hadiqa Maqsood** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Abdul Latif Qureshi** Professor, USPCAS-W, MUET, Jamshoro

Arif Asghar

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Research Project Title:

Comparative Study of Semi-Emperical Modes and Numerical Models for Soil Welting Pattern in Sub-Surface Drip Irrigation

Research Objectives:

- To compare analytical, numerical and semi-empirical model solutions for estimation of soil wetting pattern under SDI with laboratory and field data.
- Compare accuracy of solution provided by different models and evaluate their particular advantages and disadvantages.
- Uncertainty analysis of the various models used for the design of subsurface drip irrigation

Name of Supervisor:	**Dr. M. Muneer Babar** Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Dr. Altaf Ali Siyal** Professor, USPCAS-W, MUET, Jamshoro

Rubab Sahar

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Research Project Title:

Potential For Hydropower Generation in Sindh & Comparative Studies with Renewable Energy Resources

Research Objectives:

- To identify the hydropower potential sites in Sindh and perform economic analysis for all sites.
- To investigate cost benefit and potential energy comparative analysis of hydropower with other renewable energy sources including solar and wind.

Name of Supervisor:	**Mr. Muhammad Ali** Assistant Professor, USPCAS-W, MUET, Jamshoro
Name of Co-Supervisor:	**Ms. Hadiqa Maqsood** Assistant Professor, USPCAS-W, MUET, Jamshoro

SUSTAINABLE DEVELOPMENT GOAL 6:

Ensure Availability and Sustainable Management of Water and Sanitation for All

SDG-6: Targets to be achieved by **2030**

6.1:  Achieve universal and equitable access to safe and affordable drinking water for all

6.2:  Achieve access to adequate and equitable sanitation and hygiene for all

6.3:  Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials

6.4:  Substantially increase water-use efficiency across all sectors

6.5:  Implement integrated water resources management at all levels,

6.6:  Protect and restore water-related ecosystems

Contact:

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