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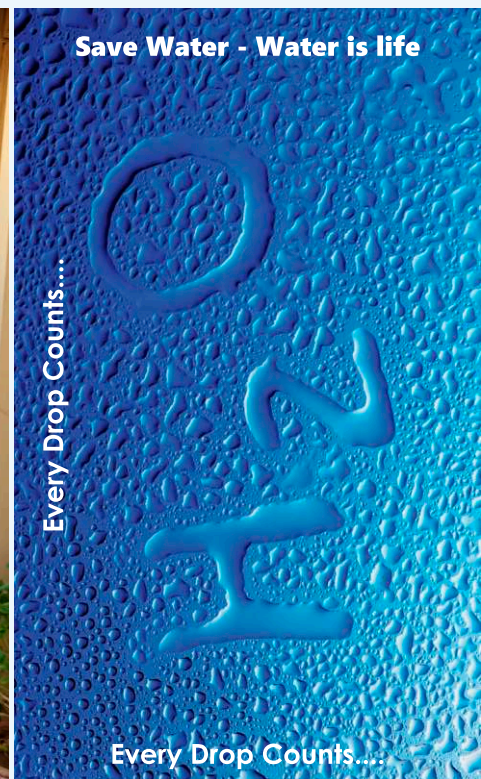
U.S.-Pakistan
Centers for Advanced Studies in Water



Mehran University of Engineering & Technology, Jamshoro

USPCAS-W Quarterly Newsletter

Apr. - Jun. 2016 | Vol. II | Issue: IV

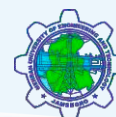


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Partnering Universities:

THE UNIVERSITY OF UTAH



Visit of Deputy Mission Director – USAID



Mr. Craig C. Buck, Deputy Mission Director USAID Pakistan visited the Center and had meeting with Dr. Mohammad Aslam Uqaili, Vice Chancellor MUET and senior management of the Center at MUET. Mr. Buck said that U.S.-Pakistan Centers for Advanced Studies (USPCAS) is multi disciplinary program, supported by the American People through the United States Agency for International Development (USAID), designed to leverage economic development in Pakistan through applied research in energy, water, and agriculture & food security. He said that MUET is one of the leading public engineering universities in the country, which achieved a good reputation by imparting quality education and enhancing the research capacity of young engineers in the region. He said that USPCAS-W in MUET is one of the state-of-the-art centers, is encouraging, and empowering women scientists and researchers for actively participation in applied research to solve Pakistan's contemporary problems. While Dr. M. Aslam Uqaili, V.C. MUET said that with the technical support from University of Utah (UU), MUET has expanded the USPCAS-W's Gender Equity Plan throughout the campus and established Society for Women Engineers (SWE), Sindh Chapter.

He said this Center has made good progress towards achieving its targets within the framework of the project. Dr. Uqaili further said that MUET through this Center has established academic relations with American universities beyond the project. Dr. Mohammad Aslam Chaudhry, Chief of Party, USPCAS-W, UU, USA, and Dr. Bakshal Khan Lashari, Project Director USPCAS-W gave presentations regarding the progress made so far. Dr. Rochelle Rainey, USAID Senior Technical Advisor on Drinking Water Quality, Sanitation and Hygiene, Hafezullah Samo, Agreement Officer's Representative and others attended the meeting. On this occasion, USAID delegation visited under construction work of USPCAS-W building at MUET and also had an interactive session with students of the Center, where the students asked questions regarding scaling up of the project, its sustainability and alumni engagement plans.



UU Mission – May 2016

The mission team from University of Utah, led by Dr. Tariq Banuri, conducted various training workshops, seminars, and brainstorming sessions at the Center. During the mission's week-long visit from May 16-20, 2016, the following sessions conducted:

- Public Lectures and stakeholders' workshops by Prof. Patrick Shea
- Workshop on Status of Water Data in Pakistan
- Research Group Meetings
- Presentation on Flagship Projects
- Workshop on MUET Clean Water Project
- Meetings on Curriculum Reforms
- Boot Camp on Research Data Management and Analysis: R Software
- Graduate Students Workshops
- Review of Fall Exchanges (Both Faculty and Students)
- Review of Faculty Activity Reports and Peer Assessment Methods
- Review on Gender Policy Framework, TVC and M&E Framework



Formation of Research Groups

During the UU mission, four parallel research groups formed through brainstorming sessions, to identify the theme specific issues, gaps and the potential projects.

Group 1: Water Governance and Sustainable Development: Participants of this group identified their priority project as, "Willingness to Accept Water Extension Services".

Group 2: Clean Water Infrastructure and Technologies: Participants of this group identified their priority project as, "Extension of MUET Water Treatment Plant Facility".

Group 3: Water Informatics and Decision Support: Participants of this group identified their priority project as, "To Evaluate Strategies to Build Resilience to Impacts of Climate Change on River Flows in Upper Indus Basin".

Group 4: Sustainable Agriculture Water Management: Participants of this group identified their priority project as, "Enhancing Agricultural Water Productivity in Different Regions/ Cropping Zones".

Prof. Patrick Shea's Engagements

Prof. Patrick Shea is currently associated with University of Utah, USA, as a Research Professor of Biology, where he teaches interdisciplinary courses related to water, land use, geology, and biology. He delivered public lectures on "Integrated Land and Water Management", at MUET and had several meetings with the stakeholders in the country.



Water and land management experts, representative from civil society, MUET faculty and other senior staff members of the Center, attended his public lectures.

Developing Water Research Agenda in Pakistan



USPCAS-W MUET in collaboration with Pakistan Council of Research in Water Resources (PCRWR) and Higher Education Commission (HEC), Pakistan organized National Consultative Workshop on “Developing Water Research Agenda in Pakistan” held in Islamabad.

Mr. Fazal Abbas Maken, Secretary for Ministry of Science and Technology, Government of Pakistan, endorsed the workshop objectives, emphasized upon the importance of having the water research agenda for Pakistan, to contribute in determining effective water conservation practices, sustainable use of available water resources, and improved water governance.

Dr. Tariq Banuri – Associate Director USPCAS-W, University of Utah, USA, spoke on Sustainable Development Goals (SDGs) and Pakistan Water Security Issues. Dr. Banuri was of the view that it is imperative to strengthen the institutional capacity of Pakistan, for which, an efficient policy mechanism is required. Dr. Muhammad Ashraf, Chairman, PCRWR welcomed all the participants in the opening session and elaborated upon the objectives of the workshop. Dr. Bakhshal Khan Lashari, Project Director-USPCASW on behalf of Vice Chancellor MUET, delivered message to the participants about the goals and expected outcomes of the workshop. The workshop was participated by academia, water scientists, water managers from government sector, I/NGOs & civil society representatives

Visit of Technical Team – USAID

USAID Pakistan's team comprising Mr. William Sedlak- Agreement Officer, Mr. Juan Esteban Proano- Acquisition and Assistance Specialist, Mr. Sohail Humayun- Acquisition and Assistance Specialist and Mr. Hafeezullah Samo- Agreement Officer's Representative visited USPCAS-W and had a meeting with senior management team of the Center. USAID team reviewed the procedures adopted by the Center including Administrative, Management, Human Resources, Finance, Students Enrollment and Exchanges, Gender Equity, Communication, Media Outreach and others.



The USAID delegates appreciated efforts of the MUET management for their commitment towards excellence and high education standards. They visited the newly under construction building of the Center at MUET. Later on, they met with MUET Vice Chancellor Dr. Mohammad Aslam Uqaili and senior management of the MUET at University Guest House, where they discussed the progress of the Center.

Research Projects Awards

To develop and implement a self-sustaining applied research program in water is one of the key objectives of this center. Pursuing the defined research objective, this center has awarded six projects in three different fields. Grant amounting Rs.14 Million have been awarded to the following organizations and institutes.

S #	Project Title	Lead Institute	Name of P.I.
Project Theme: Overcoming Water Scarcity			
01	Water Conservation and Mitigation of Arsenic in Rice through Sprinkler Irrigation System	Quaid-e-Azam University (QAU) Islamabad	Dr. Abida Farooqi
02	Climate Change: Assessing Impact of Seawater Intrusion on Soil, Water & Environment in Indus delta using GIS & Remote Sensing	USPCAS-W, MUET Jamshoro	Dr. Altaf Ali Siyal
03	Managing Uncertainties in Projected Impacts of Climate Change on Precipitation Patterns in the Indus Basin, Pakistan	USPCAS-W, MUET Jamshoro	Mr. Ghulam Hussain Dars
Project Theme: Improving Water Quality			
04	Assessment of Environmental Degradation of Manchar Lake	Pakistan Council of Research in Water Resources	Engr. Zamir Ahmed Soomro
05	Identification of Antibiotic Resistant Bacteria in Different Water Sources in Hyderabad City and its Surroundings	USPCAS-W, MUET Jamshoro	Dr. Rasool Bux Mahar
Project Theme: Strengthening Water Governance			
06	Decision Support System for Water Resources Planning and Management	USPCAS-W, MUET Jamshoro	Mr. Waqas Ahmed

Flagship Projects

Apart from research project awards, the Center has launched three flagship projects:

Pakistan Water Development Report (PWDR)

The project aims at to produce a main reference document on water related issues of Pakistan. The PWDR will be produced biennially under a specific theme aiming at helping the policy makers, researchers, water resource managers to drive policy, program priorities based on research based evidences, and make informed choices. The first edition of the report will be an attempt to answer on important question i.e. what will it take Pakistan to achieve SDG on water.

MUET Clean Water Project (MUET CWP)

The objective of this project is making MUET as a "National Laboratory for SDG on Water", with mandate to work on solutions and applications that will contribute towards achieving different targets set under the water and some of under the health SDGs.

This will create a new model for safe drinking system throughout the country.

Indus River Basin Model: Decision Support System

The objective of this project is to develop a dynamic simulation model based on Decision Support System that will explore and support future water management and planning decisions in the basin.

It will be able to capture the inter-relationships among the climate, water, populations and agriculture sectors.

GENDER EQUITY

Global and Local Perspectives on Water and Women in the Water Industry

The Utah Women of Water hosted the seminar on Global and Local Perspective on Water –Bridging Utah and Pakistan on Water issues, held in June 2016, at University of Utah, USA. The objective of this event was to bring researchers from multiple universities, including the University of Utah, Colorado State University, and Mehran University of Engineering & Technology, Jamshoro. Over the past year, regular seminars have been held to discuss a variety of "Globalocal" issues that are shared by western states and Pakistan. This seminar has provided an overview of the USPCAS-W program and share insights gained in water and gender-related issues in both local and international arenas. Dr. Steven Burian and Dr. Christine Pomeroy from the University of Utah featured the seminar, whereas Ms. Uzma Imran and Ms. Shabnam Baloch from MUET joined the discussion via Skype. They have shared stories from colleagues and personal experiences. Ms. Shabnam Baloch, Gender, & Communication Specialist gave statistics of women in the water sector in Pakistan, which revealed that women were under represented in this field especially on the senior positions. She shared the institutional and internal barriers women are facing in water sector in Pakistan.

Ms. Uzma Imran, Assistant Professor & Gender Focal Person-MUET stated that there are many hurdles in progress of women in water sector viz. uneven socio-economic development, tribal culture, poor transport, law and order situation and the perceptions of people. She stressed the need for creating awareness among women for realizing their true role in development of water sector. They briefed about the Center's support for gender equity in water sector and shared the detailed efforts that are being made at MUET to establish a Women Resource Center and to institutionalize policies that will improve women's involvement in different sectors of the water industry.



Formation of Gender Committee

In order to support management's efforts in implementation of MUET's gender equity policy, 5 member gender committee has been formed. The committee is composed of Ms. Uzma Imran as a gender focal person, Ms. Shabnam Baloch, Ms. Hadiqa Maqsood, Dr. Abdul Latif Qureshi, and Mr. Ghulam Hussain Dars as its members. This committee will work as a support body to facilitate management's efforts to mainstream gender equity initiatives and ensure all gender related and anti-harassment policies are implemented. The committee will closely work with Society for Women Engineers and other governance bodies to create enabling policy and institutional environment for women and girls at campus.

COMMUNICATION & OUTREACH

Participation in Dawn Education Fair 2016 at Hyderabad and Sukkur

Communication and Outreach strategies are central to achieve the desired targets in any project. In this connection, the communication team of USPCAS-W has been engaged in various outreach activities since its inception. The Center recently participated in "Dawn Education Fair 2016", in Hyderabad and Sukkur, organized by Dawn Media Group of Pakistan, one of the



top media groups of the Country. A stall of the center titled USPCAS-W, MUET Jamshoro in its fascia with colorful backdrop, banners, posters and LCD Screen, were installed in the fair at Hyderabad. Thousands of people including government officials, academia, engineers, researchers, students, media, and civil society representatives visited the fair. The visitors of the stall were briefed about the goals and objectives of the Center in general and for new admissions Fall-2016, in particular. It was ensured that female staff from USPCAS-W is present at the stall to facilitate female visitors. The Fair was organized for two days from 14 to 15 May 2016 at Hotel Indus, Hyderabad and at Hotel Inter Pak Inn, Sukkur on May 17, 2016. On this occasion, the Dawn group published special supplementary in which the advertisement of USPCAS-W was also published. The name of the Center was also highlighted in the news items of the fair published in Daily Dawn.

Meeting with Australian Trade Officials

Meeting with Australian Trade Commissioner India, and Australian Trade Regional Manager – Pakistan conducted to discuss and explore the opportunities to collaborate on water related projects.

Outreach Visit at QUEST, Nawabshah

Program outreach visit conducted at Quaid-e-Awam University of Engineering, Science & Technology (QUEST) Nawabshah, Shaheed Benazirabad district of Sindh province, for the program briefing. Students from departments of Civil&Environment Engineering participated in the event. Department's Chairmen also participated and appreciated the Center's efforts and its contribution towards the solution of water related problems of Pakistan. Special time was allocated for girls students for question and answer in the event.



Management Level Meetings

Several management level meetings conducted by Center's management with different ministries, industries, private Sector, and civil society organizations to increase the Center's visibility, expand its partnership portfolios and ways for sustainability.

EXCHANGE PROGRAM

First Group of Faculty Exchange returned:

Four among six faculty members of the Center returned to Pakistan and resumed their respective services, while two faculty members will complete training in 1st week of July 2016 at University of Utah and Colorado State University of USA. Exchange faculty members participated in an ambitious round of activities including multiple classes, research, a weekly seminar, and social activities. They took trips out to Antelope Island and down to Moab, as well as went on tours of local water treatment facilities. Faculty members presented their research topics at the end of the water seminar:



Dr. Rasool Bux Mahar presented his research topic on, "Development of molecular tools for isolation & identification of antibiotic resistant bacteria in urban settings"



Prof. Dr. M. Munir Babar presented his research topic on, "Towards improved management of irrigation returns flows in the Indus river basin: monitoring and modeling to enhance water quality, boost productivity, and conserve water"



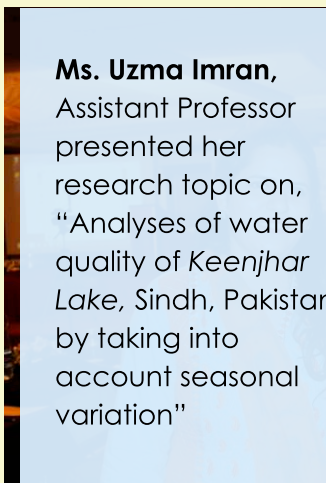
Dr. Syeda Sara Hassan, Assistant Professor, presented her research topic on, "Green synthesis of metal nano-materials and their catalytic applications for the degradation of toxic pollutant from water"



Mr. Wali Muhammad Daudpota, Assistant Professor, presented his topic on, "Soil salinity management by leaching in salt affected soils by using raised bed-furrow technique in wheat crop"



Ms. Rakhshinda Bano, Assistant Professor, presented her research topic on, "Glacier melt dynamics and Indus river basin water management"



Ms. Uzma Imran, Assistant Professor presented her research topic on, "Analyses of water quality of Keenjhar Lake, Sindh, Pakistan by taking into account seasonal variation"



CAPACITY BUILDING



Training Workshop on “Geo-informatics”

Three-day Training Workshop on “Geo-informatics” was organized by the Center in collaboration with United States Educational Foundation in Pakistan (USEFP) held at GIS Lab USPCAS-W, MUET Jamshoro. The workshop comprised of different training modules including Geographical Information System (GIS), Satellites, and Remote Sensing and others aimed at capacity enhancement of faculty and students. Dr. Ghous Bux Khaskheli, then the acting Vice Chancellor MUET inaugurated the workshop.

Prof. Dr. Mohammad Aslam Uqaili, Vice Chancellor MUET, was the chief guest in the certificate distribution ceremony held on the last day of the event.

In his conclusion remarks, Dr. Uqaili said that role of academia and universities in this modern era of knowledge-based economy has been widened. He said that educational institutes are not only imparting education and awarding degrees but also working for research and development to benefit the community at large.



Training Workshop for Irrigation Department Officials

Five-day training workshop on “Hydraulic Modeling Using HEC-RAS” for officials of the Irrigation Department, Government of Sindh, was organized under capacity building agreement with them. The objective of this training workshop was to strengthen the capacity of participants to perform hydraulic modeling and analysis of flow behavior (velocity, discharge, water surface profiles) using HEC-RAS for steady, unsteady, and mix flow conditions.



Participants were exposed to handle the following scenarios using HEC-RAS model:

- Setting-up a canal or river using cross section, bed slope and boundary condition information.
- Handling Bridges on canals
- Handling Culverts (multiple identical barrels, multiple culverts)
- Looped network
- Stream junction
- Split junction
- Channel modification
- Floodplain encroachment
- Inline weirs and structures (with and without gates)
- Lateral weirs and structures (with and without gates)
- Bridge scour
- Comparing multiple plans.



Syed Zaheer Hyder Shah; Secretary Irrigation, Prof. Patrick Shea; Research Professor University of Utah, Dr. Tariq Banuri; University of Utah, Mr. Babar Hussain Effendi; Managing Director SIDA, Dr. Mohammad Aslam Chaudhry; Chief of Party USPCAS-W University of Utah, Dr. Bakhshal Khan Lashari; Project Director USPCAS-W MUET, Engr. Zarif Khoro from Irrigation Department and others attended the conclusion ceremony.

Graduate Seminars

One of the permanent features of USPCAS-W is to organize Series of Graduate Seminars to broaden the understanding of students regarding their areas of studies, in this quarter the following seminars were organized at ORIC building, MUET Jamshoro.

Linkages between Engineering Research and Entrepreneurship

Dr. Shahid Qureshi, Program Director at Institute of Business Administration (IBA) Karachi delivered his lecture on "Linkages between engineering, research, and entrepreneurship"



Urban Climate Research: Application of Remote Sensing and GIS



Dr. Haroon Stephen, Assistant Professor and Director GIS from University of Nevada, Las Vegas (UNLV) United States of America (USA), conducted the session on "Urban climate research: Application of remote sensing and GIS". The seminar was followed by the training on GRACE and MATLAB GIS tutorials at Center's GIS Lab

Water related Laws, Policies, and Community Involvement

Mr. Masroor Ahmed Shahwani, Institutional Specialist at Sindh Irrigation and Drainage Authority (SIDA) delivered lecture on "Water related laws, policies and community involvement", as a guest speaker in which MS/PhD students participated.



Hydrology and Water Resources Engineering



Dr. Habib-ur-Rehman, Professor in Civil Engineering Department of University of Engineering & Technology (UET) Lahore delivered his lecture on "Hydrology and water resources engineering". MS/PhD students and faculty participated.

UU Mission Boot Camp, Seminars, and Workshops

The boot camp training on research data management and analysis was held for three days. This training was mainly focused on statistical analysis software "R" and its hand-on exercise. The training was conducted by Dr. Jim Venderslice.

The UU team also conducted the following seminars and workshops with MS/PhD students of the Center:

- Research lightning talks: selected students gave power point presentations on their research topics.
- Writing effective research proposals: Dr. Sajjad Ahmed from University of Nevada-USA delivered a lecture to students.
- Overview of opportunities and training for scholarships; Fulbright and other opportunities: Dr. Mercedes Ward from University of Utah gave a talk
- Briefing on fall exchange program and preparation for Spring Applications: Dr. Mohammad Aslam Chaudhry-Chief of Party-USPCASW gave briefing to the students on the topic.



USPCAS-W Participations

Visit of Chinese Yangtze River Floodplains

Mr. Ghulam Hussain Dars, Assistant Professor at USPCAS-W was among the Pakistani high delegation comprising public representative, government officials, academia and civil society/NGOs activists visited Chinese Yangtze River floodplains. The main purpose of the visit was to observe the various efforts of the Chinese Government to manage flood plains to mitigate the flood losses through ecological/soft engineering (Non-Structural



Measures) approaches especially wetland conservation and management. After the visit, the delegates suggested that Pakistan has to reform national policies, integrate hardcore engineering with ecological approaches, and adopt Integrated Water Resources Management (IWRM) approaches.

Smart Irrigation Workshop at NED University Karachi

Dr. Abdul Khaliq Ansari, Research Associate and Engr. Muhammad Rehan Hakro, Lab Lecturer at USPCAS-W, attended the workshop on Smart Irrigation (SIR, 2016) held at NED University of Engineering & Technology, Karachi on 12th May 2016. Engr. Hakro presented the research paper on "Monitoring the moisture content for efficient irrigation management", which was co-authored by Mr. Waqas Ahmed, Assistant Professor of the Center.



USPCAS-W VOICES

Ms. Uzma Imran, Assistant Professor USPCAS-W / visiting faculty at UU during exchange visit shares her story:

My experience at UU has been great. It has significantly helped me in mounting my confidence by providing a prospect for interaction with the scholarly faculty, postgraduate and PhD students and also helped me to improve my technical, social, interpersonal, research and teaching skills.

I got an opportunity to audit multiple courses relevant to my academic plans in future. It greatly helped me in edifying my content knowledge and broadening my understanding of the academic culture at US universities. I have come back with improved teaching, mentoring and research skills. Participation in graduate seminars and field trips was also an unforgettable experience of my life. I am all set to replicate and add value to what I have learnt during my visit in USA both in my teaching and research.



Poster Competition

Poster Competition on Hydro-informatics

The Center organized poster competition among its MS Students on "Hydro-informatics: Data, Management, and Analysis". There were 10 groups consisting of 3 to 4 students in each group participated in the competition. The participants exhibit the posters and gave presentations that were based on research based latest information of water issues of Pakistan.



The students presented their posters on following water related topics:

- An assessment of water distribution network in MUET, Jamshoro
- Water demand and supply analysis engaging stakeholders in water resources planning; a case study of Jamshoro
- Preparing the flow data for sharing in Hydrologic Information System (HIS) network using a hydroserver for all the barrages of Sindh
- Time series analysis of Kotri Barrage
- Land cover changes and its effect of land surface temperature and hydroclimatic condition of Hyderabad.
- Effect of urban sprawl on heat intensity; case study of Karachi
- Land cover changes in Peshawar using remote sensing & GIS techniques
- Precipitation trend analysis during last eight years (2008-2015) in Pakistan
- Hydrology of upper Indus basin
- Water supply and demand analysis of Thatta city using WEAP model

CURRICULUM REFORMS

MS Program in WaSHS

To bring curriculum reforms is one of the main components of this center, in this regard, a two years Master of Science (MS) program on Water, Sanitation and Health Sciences (WaSHS), has been introduced in this fall session 2016. In recent admissions, 13 candidates are selected for WaSHS first batch including 05 girls. This program's main focus is on access to safe drinking water, sustainable development goals in water and sanitation, hygiene overview, water treatment technologies, management of rural water supply schemes, gender and research.

USPCAS-W Picture Gallery



Vice Chancellor MUET Presents traditional and promotional gifts to the USAID Deputy Mission Director



Group Photo of USAID Technical Team with Senior Management of USPCAS-W, MUET



Dr. Bakhshal Khan Lashari, P.D. USPCAS-W, is being interviewed by Radio Pakistan Hyderabad



Dr. Rochelle Rainey, USIAD Senior Technical Advisor interacts with student of USPCAS-W, MUET



Prof. Dr. G.B. Khaskheli, Dean Faculty of Architecture & Civil Engg. inaugurates USPCAS-W GIS Lab.



Group Photo of Center's first retreat meeting. The USPCAS-W Faculty, Mentors, Students and Staff participated.



Dr. Bakhshal Khan Lashari presents shield of honor to Mr. Fazal Abbas Maken, Federal Secretary of Science and Technology, Govt. of Pakistan

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