







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

# Newsletter

Pg. 02

Introducation

Admissions Fall 2015

Pa. 03

Seminar on Water Governance in Pakistan

Workshop on Spate Irrigation

Pg. 04

**MUET & UU Partnership** 

Foundation Stone of USPCAS-W Building

Pg. 05

**MUET Signed MoUs** 

**Gender Equity** 

Pg. 06

**Curriculum Reform** 

Research

Pg. 07

**Capacity Building** 

**Professional Certification - Short Term Training** 

Pg. 08

**NEWS in Pictures** 



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## INTRODUCTION

The U.S.-Pakistan Center for Advanced Studies in Water (USPCAS-W) has been established at Mehran Univesity of Engineering and Technology (MUET) Jamshoro under the Cooperative Agreement signed with USAID on Dec. 12, 2014 for five years. USPCAS-W at MUET is one of the state of the art and modern applied research centers intend to be one of the leading centers of research excellence in water sector in Pakistan. Moreover, to generate cost-effective and sustainable solutions to water challenges and crises of the country by equipping the next generation of scientists, engineers, and policy makers through innovative programs focused on applied research, are key target goals of this center.

The center also seeks one of its major goals to achieve gender equality in the program and women scientists are being encouraged for their active participation in applied research to solve Pakistan's contemporary problems. In partnership of this project, The University of Utah, USA provides technical assistance and capacity building trainings to USPCAS-W faculty and students. The Center offers MS and PhD in four subjects viz. Hydraulics, Irrigation and Drainage (HID), Integrated Water Resources Management (IWRM), Environment Engineering (ENVENG) and in Water, Sanitation and Health (WaSH).

### **ADMISSIONS FALL 2015**

To start the first batch of Master and PhD program in three thematic areas of HID, IWRM and ENVENG, the admissions were announced in all leading newspapers of Pakistan. The entry test was taken on August 12, 2015 simultaneously at various centers across the country including Islamabad, Multan, Quetta and Jamshoro.

A total of three hundred and forty two (342) candidates appeared in the test. Among them 308 appeared for Master of Science (M.S) program and 34 for Doctor of Philosophy (PhD). The total 60 candidates qualified the test whereas 30 percent among them were female. Finally, 50 students have registered themselves.

S.No.	Study Field	Name of Degree	No. of Candidates	
			Female	Male
1.	Hydraulics Irrigation Drainage (HID)	PhD	0	02
		MS	04	08
2.	Integrated Water Resource Management (IWRM)	PhD	01	03
		MS	02	05
3.	Environmental Engineering (ENVENG)	PhD	0	04
		MS	06	15
	Total		13	37



#### SEMINAR ON WATER GOVERNANCE IN PAKISTAN

An executive seminar on "Water Governance in Pakistan" organized by USPCAS-W MUET Jamshoro and The University of Utah, was held at Karachi on Monday, August 03, 2015. Sindh Minister for Finance, Planning & Development and Energy Syed Murad Ali Shah was the chief guest while U.S. Consul General Karachi Mr. Brian Heath, Dr. Randy Hatfield, USAID's Senior Policy Advisor, Dr. Steve Burain Director USPCAS-W University of Utah. Mahmood-ul-Hasan Butt representative from Higher Education Commission of Pakistan, Vice Chancellor MUET Prof. Dr. Mohammad Aslam Ugaili, were the guests of honor in inaugural session.

The inaugural session of seminar was followed by two technical sessions, Mr. Arif Ahmed Khan, Federal Secretary for Ministry of Climate Change, Government of Pakistan chaired the first technical session whereas Prof. Dr. Memon Mujeeb-u-ddin Sahrai — Vice Chancellor Sindh Agricultural University Tandojam, chaired the second session. Speakers appreciated efforts of USAID, HEC, and Government of Pakistan for lunching this water research center at MUET, for the solution of water related problems of Pakistan. Around 120 participants belonging to federal and provincial governments, academia, civil society organizations, NGOs, Media and others attended the seminar.

#### **WORKSHOP ON SPATE IRRIGATION**

A one-day workshop on "Spate Irrigation: Potential and Challenges in Sindh" was jointly organized by USPCAS-W and Research & Development Foundation (RDF) in collaboration with Oxfam Novib and The University of Utah at MUET Jamshoro. Objective of the workshop was to aware the students with Spate Irrigation technology and its role in flood management and drought mitigation.

Students were encouraged to conduct research on Spate Irrigation System, for which RDF offered internship opportunity to the researchers.



#### MUET AND UU PARTNERSHIP



MoU signed between MUET Jamshoro and The University of Utah (UU) at United States for the success of USPCAS-W. The MoU signing ceremony between the both hosted on Tuesday, August 11th, 2015 at UU Campus Salt Lake City, United States of America. The MoU agreement sets out goals, anticipated roles, and responsibilities for both Universities in making USPCAS-W a success that goes far beyond the initial five years being funded by USAID. The UU president David W. Pershing and Vice Chancellor MUET Dr. Mohammad Aslam Uqaili signed the MoU while Consul General of Pakistan Hamid Asghar Khan, SVP Dr. Ruth V. Watkins, Mr. Dan Grant - Program Advisor at USAID Washington, Dr. Mohammad Aslam Chaudhry , Dr. Bakhshal Khan Lashari - Project Director USPCAS-W MUET and other senior faculty and officials belonging to both of the universities attended the ceremony.

#### ■ FOUNDATION STONE OF USPCAS-W BUILDING

USAID Mission Director to Pakistan Mr. John P. Groarke, USAID's Senior Policy Advisor Dr. Randy Hatfield, Vice Chancellor MUET Prof. Dr. Mohammad Aslam Ugaili, Project Director USPCAS-W Dr. Bakhshal Khan Lashari, and Chief of Party University of Utah Dr. Mohammad Aslam Chaudhry performed groundbreaking for new building of USPCAS-W at MUET Jamshoro on Thursday, September 17, 2015. The proposed USPCAS-W building costing 370 million rupees, with state-of-the-art research facilities will have seven (07) modern equipped research laboratories, six (06) class rooms and separate facilities of for handicapped and women. The building will be completed by the end of year 2016. Vice Chancellor



MUET appreciated USAID Mission Director for chosing MUET for the establishment of USPCAS in water, which will surely be emerged as one of the regional world class education centers dedicated to resolve water crisis of Pakistan through applied research, developing specialist human resources and technologies; academia-industry collaboration and policy formulation.

#### MUET SIGNED MoUs



So for, MUET has signed four MoUs with following organizations for joint-venture on water research.

- 1. Water and Power Development Authority
- 2. Pakistan Council of Research in Water Resources
- 3. Sindh Agriculture University Tandojam
- 4. Sindh Irrigation & Drainage Authority

(WAPDA) (PCRWR) (SAU) (SIDA)

These MoUs aimed at establishing a framework agreement for cooperation to develop and implement joint research and training activities and initiatives for addressing water scarcity and quality challenges through improved water governance and efficient water management. The parties will collaborate and support research and training activities leading to sustainable development and management of water resources in Pakistan.





One of USPCAS-W's major goals and crosscutting strategic objectives, is to achieve gender equity in the program. Gender equity is a key strategic direction for USPCAS-W in particular and for MUET in general. The Gender Equity Plan (GEP) provides policy guidance and specific actions to promote equity. The plan addresses both employees and students. The plan also contributes for a better gender balance in categories of staffing and study programs, and promotes an organizational culture for working and learning that will give women and men equal opportunities. Center has to achieve following gender policy objectives:

- Promote diversity and inclusiveness amongst its faculty, students and staff;
- Support women and girls in the realization of their full human rights; and
- Reduce gender inequalities in access to research and education related resources and benefits

#### **CURRICULUM REFORM**



Curriculum reform is one of the main components of the project. Since beginning of the project, University of Utah and MUET faculty and management have been very keen to introduce such an excellent program which attract all the stakeholders and create market for the graduates. The continuous efforts have finally come up with very excellent program for Master's and PhD students. During this period following courses for semesters 1 of Masters Program in different fields have been introduced.

Sustainable Development and Water Environment and Food Security Nexus (Common Course)

- PROGRAM 1: HYDRAULICS, IRRIGATION AND DRAINAGE (HID)
  - Course -1 Irrigation Water Management
  - Course -2 Agriculture Land Drainage
- PROGRAM 2: INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)
  - Course -1 Integrated Water Resources Management: Principles & Applications
  - Course-2 Water Infrastructure Planning and Management
  - Course -3 Catchment Hydrology
- PROGRAM 3: ENVIRONMENTAL ENGINEERING (ENVENG)
  - Course -1 Physical, Chemical, and Biological Processes
  - Course -2 Solid and Hazardous Waste Management
  - Course -3 Air and Noise Pollution Engineering

#### RESEARCH

Developing a robust and high impact applied research program in water is one of the key objectives of the USPCAS-W. An essential quality of a vibrant research program is effectively aligning curriculum, teaching, outreach, and engagement to advance research activities. Paramount will be to identify mutually beneficial innovations that successfully link degree programs, courses, and recruitment and retention programs with research. The call for proposal in Applied Research (Grants) in water has been invited through advertising in leading newspapers recently.



At present a total of three grants of up to Rs. 3 Millions each have been offered to be funded in the following themes:

- Overcoming Water Scarcity
- Improving Water Quality
- Strengthening Water Governance

#### CAPACITY BUILDING



Trainings and Workshops are the main tools to promote and upgrade the level of faculty as well as others. The team of experts of the University of Utah (UU) is fully committed for this purpose. During the visit of MUET the UU team organized series of trainings and workshops for the faculty of USPCAS-W and others from MUET and private organizations. During the period following trainings and workshops were organized for faculty:

- > Stakeholders Consultation workshop on Higher Education and Research Needs in Water Sector
- ➤ Innovate Teaching Workshop
- Curriculum reforms Workshop
- Gender mainstreaming Workshop
- Water Quality and Climate Change
- Water Evaluation and Planning System- WEAP
- Ponds Design & Management
- Decision Support System for Agro-technology Transfer (DSSAT)
- Remote Sensing and Digital Image Processing for Precision Agriculture

## PROFESSIONAL CERTIFICATION - SHORT TERM TRAINING -

#### FLOOD FORECASTING

Realizing the importance of the flood forecasting and in order to strengthen University-Industry capacity, USPCAS-W, MUET Jamshoro in collaboration with Sector Improvement Project (WSIP), Government of Sindh conducted a three-day workshop on "Flood Forecasting." Dr. Shafiq-ul-Islam a renowned scholar and expert of MIT and TUFT University, Boston, USA conducted the workshop. The participants of the workshop were from Water and Power Development Authority-WAPDA, Irrigation and Drainage Authority-SIDA, Water Sector Improvement Project-WISP, Research Development Foundation-RDF, LAAR Humanitarian Development Program-LHDP, Sindh Agriculture University Tando Jam-SAU, Irrigation Department-Government of Sindh, NED University of Engineering and Technology Karachi-, Mehran University of



Engineering and Technology Jamshoro MUET, Provincial Disaster Management Authority- PDMA, Drainage and Reclamation Institute of Pakistan –DRIP and Pakistan Council of Research in Water Resources-PCRWR.

### **NEWS IN PICTURES**



Dr. Bakhshal Khan Lashari & AOR Hafeez Samo receiving US Consul General Karachi Mr. Brian Heath



USAID Officials during Project Post Award Meeting with MUET management



USAID Officials visiting USPCAS-W Building Site



Dr. Sajjad Ahmed of UU conducting workshop on Teachers Capicity Building



Group photo of Procuremanament Management Training staff



MUET delegation during the visit of Capitol Hill, United States of America



Welcome & Orientation Session with MS/PhD students of first batch



Engr. Nizamuddin Domki Conducting Seminar on Health Safety & Environment



 $\hbox{UU Team \& USPCAS-W faculty during field visit}\\$ 

#### **Disclaimer:**

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Chief Patron: Prof. Dr. Mohammad Aslam Uqaili - Vice Chancellor MUET Patron: Prof. Dr. Bakhshal Khan Lashari - Project Director USPCASW

Co-Patron: Prof. Dr. Mohammad Aslam Chaudhry – Chief of Party, The University of Utah

Editorial Board: M. Shahid Panhwar, Ms. Shabnam Baloch, Sahib Khan Bhand | Layout & Design: Saqib Syd.

For Feedback uspcasw@admin.muet.edu.pk | water.muet.edu.pk



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