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



Quarterly NEWSLETTER

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Partnering Universities: THE UNIVERSITY OF UTAH

MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY JAMSHORO, PAKISTAN

Inauguration of New Building for USPCAS-W

USAIDMission Director to Pakistan Jerry Bisson, USAID Deputy Mission Director for Sindh &Balochistan Denise Herbol, Provincial Minister for Education and Literacy Jam Mehtab Hussain Dahar, Vice Chancellor MUET Dr. Mohammad Aslam Uqaili and former Vice Chancellor MUET Prof. S. M. Qureshi,performed inauguration of new building for Center for Advanced Studies in Water (CAS-W) at MUET Jamshoro. Speaking in the inaugural ceremony, Jerry Bisson said, "The graduates of the center will play a positive role in helping to improve the governance of Pakistan's precious and limited water resources by making very productive use of this contribution from the American People." Speaking on the occasion, Denise Herbol highlightedthe United States' long-term commitment to strengthen Pakistan's education sector and help find practical solutions for the country's water challenges. Addressing the researchers, she said, "The work you all do here will have important implications for growth in Sindh and Pakistan."

Minister Jam Mehtab Hussain Dahar expressed his appreciation for USAID support and thanked the United States for assisting in many projects in the province, including basic education and health. He said, "Government of Sindh focuses on ensuring supply of safe drinking water and sanitation services in the province".

Vice Chancellor Dr. Mohammad Aslam Uqaili thanked USAID for its full financial support in the establishment of the Centre and the University of Utah for its technical and capacity-building support. He said, "Overall objective of this Center is seeking solutions to Pakistan's water-related challenges by educating and training the next generation of water sustainability leaders."

The dignitaries also had a round of visit to the newly constructed building of the Center, where they have been briefed about the facilities provided to faculty, scholars and the staff in the Center.

The facility was constructed with the support of the U.S. government under the U.S.-Pakistan Center for Advanced Studies in Water (USPCAS-W) project. The new three-story state-of-the-art building has a covered area of 54,721 square feet with an additional 108,600 square feet of open area for landscaping and future expansion. The facilities include five classrooms, six research labs, a library, a lecture theater/auditorium, a conference room, student common rooms, research scholars' room and administration offices.

This initiative is part of USAID's larger $127 million U.S.-Pakistan Centers for Advanced Studies program that is harnessing applied research to find innovative solutions for Pakistan's water, energy, agriculture, and food security challenges.

Federal Minister Ahsan Iqbal visits USPCAS-W

Mr. Ahsan Iqbal, Federal Minister for Planning, Development, and Reform, Government of Pakistan visited USPCAS-W MUET Jamshoro. Interacting Center's faculty and students, the minister said, "Through science, applied research and modern technology, the solutions to the challenges faced by Pakistan could be sought." Mr. Iqbal said that Pakistan was one of the vulnerable countries because of water shortage and climate change but the solution of those vulnerabilities lay in science, engineering and technology.

"We must find solutions for water efficiency and clean drinking water to meet future needs"

Ahsan Iqbal

He said that Centers for Advanced Studies in Higher Education Project funded by the United States Agency for International Development (USAID) Pakistan, will provide efficient solutions to the government for the water crisis.

Federal Minister Ahsan Iqbal, while referring to China-Pakistan Economic Corridor (CPEC) said that the CPEC is a fusion of multiple developments in the global, regional, bilateral and domestic contexts. The ultimate objective of the CPEC, he said, is peace, prosperity, and well-being of the people of the two countries, the region, and the world. He said Pakistan through CPEC was going to add 10,000 MW electricity to the national grid by May 2018, bridging the entire gap in demand and supply of energy consumption.

He further said that Pakistan is the next emerging economy of Asia and soon to become an Asian Tiger with fully developed infrastructure and economic development.

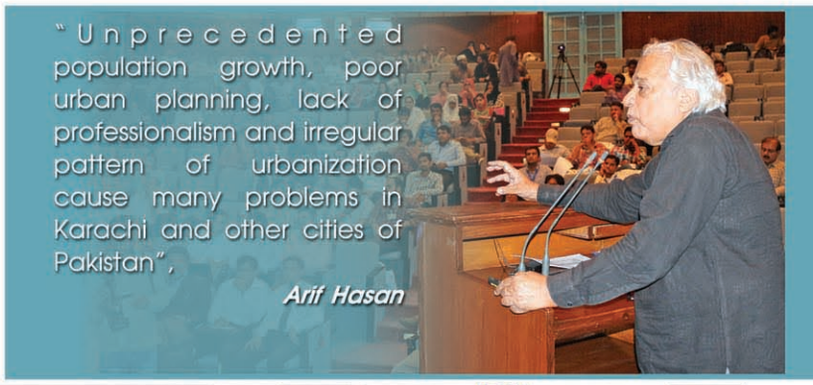
The minister also visited the MUET Central Library and the newly constructed building of USPCAS-W.

On this occasion, Dr. Mohammad Aslam Uqaili, Vice Chancellor MUET briefed him regarding academic and research activities of the University, while Dr. Bakhshal K. Lashari,

Project Director USPCAS-W briefed the minister about the Center's new building, laboratories, andfacilities, which are being provide to the researchers.

First Young Researchers' National Conference on Water and Environment

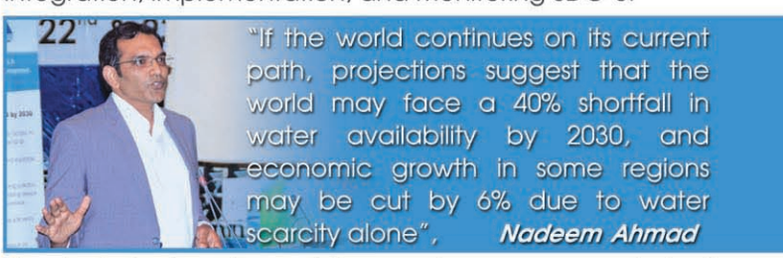
The First Young Researchers' National Conference on Water and Environment was organized under the auspices of U.S.-Pakistan Center for Advanced Studies in Water (USPCAS-W), held at the auditorium of Mehran University of Engineering & Technology (MUET), Jamshoro.



Dr. Mohammad Aslam Uqaili, Vice Chancellor MUET,speakingin the inaugural ceremony of the two-day conference said that the sole purpose of educational and research institutes is to benefit the common people by uplifting their living standards through applied and action research. Dr. Uqaili appreciating the idea of youngresearchers' conference said that such conferences will pave the way for the healthy competition among the young researchers and also will provide networking opportunities to work collectively to tackle the water and energy challenges faced by Pakistan. Dr. Rasool Bux Mahar, Deputy Director Academics and Research at USPCAS-W MUET, briefed about the aims and objectives of the conference.Dr. Jeff Ullman, Technical Adviser to the Center from theUniversity of Utah, USA, Prof. Dr. Khan Mohammad Brohi, Dean Faculty of Architecture and Civil Engineering MUET, Prof. Dr. M. Munir Babar, Professor at USPCAS-W, also spoke on this occasion.

In theplenary session, Mr. Arif Hasan, the country's famous architect-planner, social researcher and writer delivered his talk on Urbanization Trends and their Environmental Repercussions: The Case of Karachi.

The second speaker in the session was Mr. Nadeem Ahmad, Manager Policy and Advocacy in Water Aid Pakistan. He gave a presentation on Sustainable Development Goals (SDGs) and Water: Thematic Integration, Implementation, and Monitoring SDG-6.



The technical sessions of the conference were chaired and co-chaired by the senior faculty members of the Center, MUET and other universities.

Prof. Dr. Tauha Hussain Ali, Pro-Vice Chancellor MUET, was the chief guest at the closing ceremony held on the second day of the conference at ORIC MUET. In conclusion, Dr. Rasool Bux Mahar, presented the recommendations and suggestions of the two-day long conference suggested by the chairs and co-chairs of the different technical sessions. On this occasion, the positions holders of the paper presentation and poster competitions, were awarded cash prizes and appreciation shields.

This two day event allowed young researchers to present at a conference, take suggestions from fellow researchers and scholars, as well as test run and get advice on how to refine their papers to approach international conferences. Total 52 research papers and 11 posters were presented by the young researchers from the country in the conference.

UU Mission-May 2017

The Universityof Utah (UU), USA has partnered with MUET in its efforts for preparing the next generation of water sustainability leaders by improving latter's technical and institutional capacities in delivering high quality education and applied research. In addition to long-term capacity building, both the partner universities have embarked on inculcating the best practices of faculty and students through participatory seminars.

The UU May 2017 Mission led by Prof. Dr. Steve Burian, include Dr. Tariq Banuri, Dr. Mike Barber, Dr. Krista Carlson, Dr. Mercedes Ward, and Dr. JeffUllman, conducted a series of workshops at MUET.Prof. Patrick Shea,Research Professor of Biology at UU and Mr. Mark Hale, world renowned development professional, conducted special workshops and sessions with stakeholders, faculty and students of the Center.

The theme for the mission was "Innovation for Impact", building on this theme, the team worked to more deeply engage USPCAS-W MUET faculty, students, and stakeholders in a collaborative process. Workshop instructor teams included UU faculty members along with selected MUET faculty as co-instructors. The mission helped the faculty apply strategies, datasets, and tools to assess water system climate vulnerabilities and develop adaptation strategies. It also helped MUET faculty brainstorm innovations for advancing technological, financial, and social solutions to supplying clean water. The group also worked to build industry-academia research partnerships, as well as developing teaching materials using the flipped classroom approach.

• Workshop on Climate Vulnerability Assessment and Adaptation of Water System

The workshop assessed climate vulnerabilities of the Indus River System, clean water access, sanitation in Pakistan, and the Hyderabad water utility. The instructors presented a variety of approaches and tools to help initiate new climate adaptation projects working in collaboration with relevant stakeholders. Workshop speaker Steve Burian addressed how wide-spread this issue is, saying "Assessing vulnerabilities of water systems is not exclusively a Pakistan problem, it is a $20 trillion dollar global problem."

Other speakers also stressed the urgent need to increase the amount and quality of data for climate vulnerability assessment and adaption and how this data can be used to create better policy briefs. The workshop aimed at to advance MUET research collaboration and training capacity related to climate vulnerability assessment and adaptation planning and engineering.

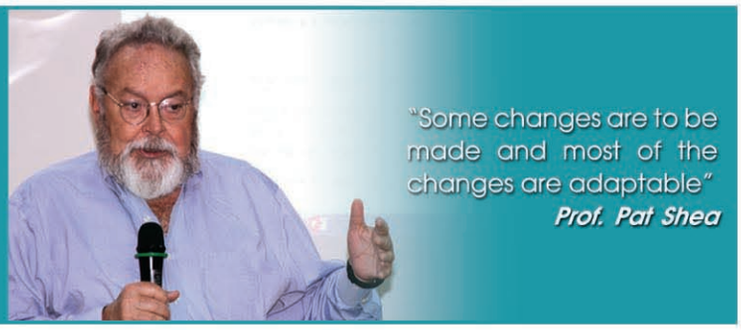
• Flipped Classroom Workshop

The UU team also hosted a Flipped Classroom Workshop to introduce strategies and techniques to develop lessons and deliver instruction using the flipped classroom approach. The workshop elements helped attendees to: explain the advantages and disadvantages of the flipped classroom; identify when, how, and what to implement using flipped classroom approach; use bottom-up design of instruction for flipped classroom lessons; apply Camtasia software to produce lecture materials; use student learning assessment techniques for flipped content; and engage students in learning exercises in the flipped classroom. During the workshop, faculty members took existing lessons and worked to transform them into flipped lessons. Professor Jeff Ullman taught the workshop participants about the basic principles underlying the flipped classroom approach. He accentuated that adopting a new style of teaching can be difficult, but an increased emphasis on active learning can promote higher order thinking skills.

UU Mission-May 2017

• Prof. Patrick Shea Conducted Workshop

Prof. Patrick Shea, Research Professor of Biology at UU, USA conducted workshop on Climate Vulnerability Assessment and Adaptation of Water Systems at the Center. Prof. Pat Shea, the famous academician, lawyer and politician of USA while conducting the workshop said that academia in collaboration with the government and private sector could work together for the development of the people of Pakistan by uplifting their living standards. Speaking in the workshop, he said that the general human reaction is to the real world problems is the duck who slept after acertain period of time when it was experienced by depriving her of basic needs. He said that we need to come up with the model to understand the people and their problems at thelocal level then to bring the positive changes in their lives accordingly.



Prof. Shea said that by modifying the existing system, we have to work hard to improve the quality of water and other related issues of basic needs of the human being in collaboration with the related departments of thepublic and private sectors. He said technology tied the local solutions to the global problems by reducing communication gap and language barriers. "Collective efforts at theglobal level can be undertaken for the solution of the communities' problems, which are very much feasible, applicable and sustainable in today's world", he added. The session was also attended by the faculty and students of the Center. Prof. Pat Shea engages a participant in a discussion on the creation of policy briefs as part of the Climate Vulnerability Assessment and Adaptation of Water Systems Workshop.

• Mr. Mark Hale Conducted Session on Sustainable Development Goals

Mr. Mark Hale, world renowned development professional, conducted session on Sustainable Development Goals. He said that understanding the nature of the problems leads to form the number of the options for planning and action. He was of the view that that Sustainable Development Goals (SDGs) have history of intense planning and intense agenda setting. Referring the historical background of SDGs, he said that in 1992 at Rio De Janerio, Brazil the agenda 21 was adopted but was not fully implemented on any significate scale and consequently we faced the dilemma of biological, ecological and displacement behavior. Subsequently in 2015 a new global agenda of Sustainable Development Goals (SDGs) containing 17 goals and 169 associated targets was adopted, he added. Mr. Hale informed thatcommendable ambition requires cooperation with many other partners and stakeholders.

"Development solutions which may lead to the worries of stable, optimal and equitable over long period of time should be applied for the solutions of water relates issues."
Mark Hale

Mr. Hale said that pursuing the SDGs and particularly water related SDG, this Center will play the significant role to provide the research results, on which the partnerships and networks will be built for enabling to move the recommendations for the sustainable solutions.

Two-Day Symposium on Industry-Academia Collaboration on Water Technologies Research

Two-Day Symposium on Industry- Academia Collaboration on Water Technologies Research organized by the Center in collaboration with the University of Utah, held at Training Center of Foreign Faculty Hostel, MUET Jamshoro. Industry, academia, government, civil society, utility professionals, and others came together to share technological, financial, and social challenges and solutions for clean water system sustainability. The group also worked to identify approaches for forming sustainable partnerships.
Mr. Waseem Vohra, Vice President Federation of Pakistan Chambers of Commerce & Industry (FPCCI) and the

UU Mission-May 2017

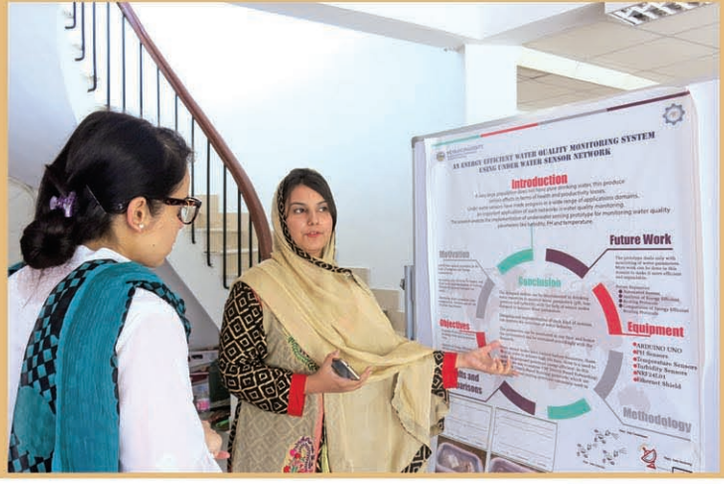
Chairman USPCAS-W Standing Committee on Business-Academia Collaboration chaired the first-day session on Industry-Academia Water Technologies Research Forum. Mr. Vohra said that Industry of Pakistan was facing the immense problems and issues regarding the water, its availability, conservation, use, and reuse. He said that 95% of Water in Pakistan used for Agriculture which contributes 20% of GDP, whereas Industry consumes only 2% of Water but contributes 22% of GDP of the country.

"The key for successful industry-academia research partnerships is to focus on the most urgent challenges facing Pakistan",

Waseem Vohra

The first-panel discussion was focused on the water-related business opportunities, research and development needs in Pakistan. The experts belonging to the academia, industry and water sector including Mr. Siraj Nasir Siddiqi from Afghanistan, Dr. Arshad Mahmood from Archroma Pakistan Limited, Mr. Nazeer Ahmed Memon, General Manager Sindh Irrigation and Drainage Authority (SIDA), spoke on the water-related business opportunities in Pakistan and the key research development needs to take advantage of these opportunities.

This workshop also led into an Industry-Academia Water Technologies Research Co-Creation Workshop where the group worked to produce outlines of concept notes to be submitted to the USPCAS-W Industry-Academia Research Partnership Seed Grant opportunity.



Dr. Rasool Bux Mahar

Dr. Mercedes Ward

Dr. Zeeshan Khatri

Dr. Rasool Bux Mahar, the co-chair of the session while sharing the goals and objectives of the symposium, said that the workshop was aimed at to provide aplatform to share industry and academic perspectives on technology needs, application, and innovations.

Dr. Zulfiqar Ali Umrani, Manager Entrepreneurship, and innovation at MUET moderated the panel discussion.

In the technology spotlight: Water Technology Research at the Business-Academia Interface Session, Dr. Tahir Rafique, Senior Scientific Officer of Pakistan Council of Scientific and Industrial Research (PCSIR) and Dr. Zubair Ahmed, Professor at USPCAS-W conducted their sessions on the Wastewater Treatment Technologies. Dr. Krista Carlson, Assistant Professor atUniversity of Utah, USA gave apresentation on Point-of-Use Sensing and Mitigation of Pathogens in Drinking Water, whereas, Mr. Siraj Nasir Siddiqi delivered atalk on Water Sensors of Canal Monitoring. The speakers highlighted water technology research and its interconnection at the interface of business and academia.

Celebration of World Environment Day

USPCAS-W in collaboration with Institute of Environment Engineering and Management (IEEM) MUET celebrated World Environment Day on 5th of June in the main auditorium of the University. This year the theme of the day was, **"Connecting People to Nature".**

Prof. Dr. Mohammad Aslam Uqaili, Vice Chancellor MUET was the chief guest in the event. Speaking in the event, Dr. Uqaili said that the environment is basically an attitude of a man to nature, which affects the whole scenario. He said that by adopting the modern technology with apositive attitude, could bring the positive change in the society.
"In order to achieve the sustainable development, people have to adopt environment-friendly behavior and optimistic attitude to nature", Dr. Uqaili added.

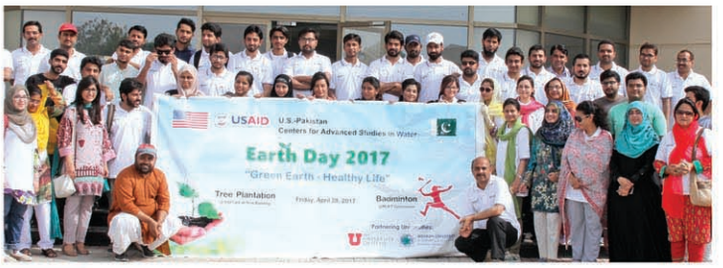
He further said that everyone has to play his or her vital role to solve the problems pertaining to the basic needs of the communities. On this occasion, interdepartmental competition among the students for declamation and poster competition were held, also the theme related tableaus and small scale projects were presented.

Earth Day Celebrated

The Earth Day was celebrated by planting the trees at the Center's new building and the badminton tournament wasalso organized at MUET Gymnasium. The USPCAS-W faculty, students and staff participated in the tree plantation and also in the tournament.

Dr. Rasool Bux Mahar said that due to environment degradation in the society, the everyday should be celebrated as earth day by contributing to the green environment. Dr. Mahar further said these type of extra-curricular activities afresh the mind of the participants, to think innovative and work enthusiastically for the research oriented activities.
Engr. Saleem A. Memon, Director Sports MUET, inaugurated the tournament. Engr. Memon said that such type of sports activities were encouraged in MUET to keep the students, faculty, and staff healthy and innovative. Apart from the academic and research, this Center is very much active in organizing sports activities since last year.

Total 32 teams distributed in the four pools who contested the in the badminton tournament. Mr. M. Shahid Panhwar, M&E Specialist and Mr. Muhammad Wajid Ijaz, PhD Scholar (Env.Eng.) of the Center won the final match by defeating the MS Students Mr. Imdad Ali Nizamani and Ms. Iram Sifat. The trophies and cash prizes were presented among winner and runner teams.



Outreaching in Balochistan

One of the important components of the USPCAS-W Project is to reach out to underprivileged areas of Pakistan and especially relevant graduate female students for taking admission in the Center.

In this connection, the USPCAS-W team comprised of three faculty members include Ms. Uzman Imran, Dr. Asmatullah and Mr. Muhammad Ali, all assistant professors, visited three universities of Balochistan province. They visited Sardar Bahadur Khan Women University (SBKWU) Quetta, Balochistan University of Information Technology (BUITEMS) Quetta, and Baluchistan University of Engineering & Technology (BUET) Khuzdar in April 2017.

During this outreach visit, the team informed the participants about the Center's scope, aims, and objectives. The given presentations covered the introduction of Centers for Advanced Studies (CAS) project of USAID, the partnership with the American Universities in general and about the technical support provided by The University of Utah (UU) to MUET for strengthening of USPCAS-W, in particular. The team also shared about Center's gender policy and its achievements. There were 400 to 500 relevant participants including students, faculty members, and administrative staff of the universities participated in the outreach sessions.

Students Field Visits

USPCAS-W students of 2016 batch and faculty visited Asia's largest Ultra-filtration plant constructed in collaboration with PAK OASIS in Shaheed Benazir Abad District, Sindh Pakistan on 7th of April, 2017. The objective of this visit was to give practical knowledge to the students about the working of ultra-filtration technology. It was known that the plant was capable of purifying 8 MGD, supplying fresh and safe potable water to local population of over 500,000.

Graduate Seminars

One of the permanent and salient features of the Center is to organize a series of graduate seminars to broaden the understanding of the students for their research areas. In this quarter, the following graduate seminars were organized at ORIC, MUET Jamshoro.

Investigation and Mitigation of Ground Water Quality Issues in Thar Desert of Sindh Province

Dr. Tahir Rafique, Senior Scientific Officer, Pakistan Council of Scientific and Industrial Research (PCSIR) conducted a graduate seminar on, ***"Investigation and Mitigation of Ground Water Quality Issues in Thar Desert of Sindh Province, Pakistan."***

The significant contribution of Dr. Tahir Rafique is in the investigations of groundwater quality and mitigation of fluoride fluorosis problems in the areas of Thar Desert of the province. The faculty and students of the Center participated in the seminar.

Transition from MDGs to SDGs: A Case of Pakistan

Mr. Nadeem Ahmad, Manager Policy and Advocacy at Water Aid Pakistan delivered a lecture on, ***"Transition from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs): A Case of Pakistan."***

MS students of Integrated Water Resources Management (IWRM) participated in the lecture.

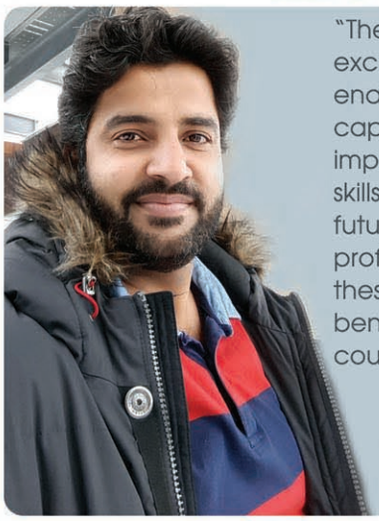
Lecture on Awareness of E-Resources under Digital Library

MS Students of 2nd Batch participated in the training session on, ***"Awareness of E-Resources under Digital Library"***, organized by the Center at MUET Library & Online Information Centre (LOIC). The session aimed at to provide information to the postgraduate students about the access to the Digital Information Resources. Mr. Zahid Hussain Sahito, Deputy Librarian at MUET LOIC conducted the session and made a presentation about digital library e-resources. While conducting the session Mr. Sahito briefed about the mechanism and procedure of setting up Virtual Private Network (VPN) as to access the e-resources anywhere by using given IDs. He also briefed the participants regarding the reference citation, downloading of e-journals, e-books, e-thesis/dissertations and other e-resources.

Session on Fulbright Scholarship

An information session on Fulbright scholarship program was organized by the Center for the at U.S.-Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering and Technology (MUET) Jamshoro for MS Students of USPCAS-W. Ms. Hadiqa Maqsood, Assistant Professor at USPCAS-W, who has been recently awarded the Fulbright Ph.D. Scholarship, conducted the session. While conducting the session specifically on the Ph.D. program of the Fulbright scholarship program, she informed the students regarding the eligibility selection criteria, scholarship grant, applicant's capacity parameters, essays and requirements of documents.

Exchange Students Experience

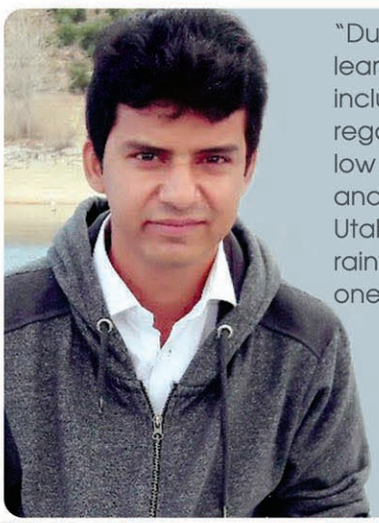


"The USPCAS-W student exchange program has enabled me to build up my capacity as a researcher and improved my technical writing skills, which will help me in my future career goals and professional growth. I think these types of exchanges also benefit the culture of the both countries - USA and Pakistan."

Zohaib Nizamani
(MS ENV.ENG.-15)

"The exchange visit at University of Utah, USA improved my personal and professional skills through several activities include applied research training, technical writing skills, academic coursework, field trips, and interdisciplinary seminars. I also explored the USA by involving myself in different social and cultural activities."

Ms. Syeda Fatima Zehra
(MS- IWRM-15)



"During exchange visit, I have learned many things which includes research techniques regarding my research area of low cost air pollution sensors and communications skills. In Utah, hiking on national park in rainy and snowy weather, was one of my best experiences.

Kaleemullah Shaikh
(MS ENV.ENG.-15)

"This exchange opportunity broaden my understanding regarding water issues on a global scale and use that knowledge for finding sustainable solutions to the same issues of Pakistan. The visit also provided me an opportunity to experience the USA Culture and also to exhibit my own culture."

Sohail Raza Langah
(MS ENV.ENG.-15)

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

6.a: Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs

6.b: Support and strengthen the participation of local communities in improving water and sanitation management

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