



Newsletter

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International Training Workshop on “Climate Change and Water Safety Effects along CPEC” held at Pakistan Academy of Sciences, Islamabad (April 10-14, 2025)



The International Training Workshop on Climate Change and Water Safety Effects along CPEC was jointly inaugurated by the Executive Director of Higher Education Commission, Pakistan, Dr. Zia Ul-Qayyum and Minister Counselor of the Embassy of China in Pakistan Mr. Xu Hangtian at the Auditorium of Pakistan Academy of Sciences in the presence of dignitaries from the Chinese Academy of Sciences (CAS) namely, Dr. Kang Shichang (Director General of Institute of Mountain Hazards and Environment-China), and Dr. Su Lijun (Director General of China-Pakistan Joint Research Center on Earth Sciences at QAU, Islamabad), and Prof. Dr. Muhammad Aslam Baig (Secretary General, Pakistan Academy of Sciences-Islamabad), Prof. Dr. Mumtaz Shah (Quaid-i-Azam University-Islamabad), as well as representatives of Pakistan Science Foundation, Global Climate Change Impact Study Centre-Islamabad, National Disaster Management Authority, PMAS Arid Agriculture University, Rawalpindi, Pakistan Meteorological Department, and other research institutions.

This international training workshop has been jointly organized by China-Pakistan Joint Research Center on Earth Sciences(CPJRC) and Pakistan Academy of Sciences (PAS) with the sponsorship from The Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) from April 10-14, 2025. It is worth mentioning that Quaid-i-Azam University (QAU), the responsible partner of CPJRC from Pakistani side is also coordinating in the organization of this gigantic scientific event.

The Inaugural event of the International Training Workshop was attended by over 120 professors, academicians and young talents from Pakistan, and 20 delegates from Hindu Kush Himalaya region including China, Nepal, Sri Lanka, Bangladesh, as well as Afghanistan.

In their opening addresses, Dr. Zia ul Qayyum (Executive Director, Higher Education Commission, Pakistan) and Mr. Xu Hangtian (Minister Counselor of the Embassy of China in Pakistan) highlighted the importance of China-Pakistan Cooperation for the academic, technical and socioeconomic welfare of Pakistan. They also addressed the distinctive challenges of Climate Change and its relations with cryosphere, water resources, disaster risk reduction, agriculture and human well-being and the urgent need to address these challenges through integrated and innovative approaches to ensure sustainable water management and security. The other speakers of the occasion, namely Prof. Dr. Kang Shichang, Prof. Dr. Su Lijun, Prof. Dr. Aslam Baig and Prof. Dr. Mumtaz Shah also emphasized that the water-related disasters are becoming more frequent and severe; and therefore, water resources of Pakistan are under serious threat. It was elaborated that strong friendship between China and Pakistan is quite important to advancing sustainable development and building a climate-resilient future along CPEC corridor.

Policy Dialogue on “Science, Technology, and Engineering for Development (STED)-2025: Innovate, Integrate and Implement” (April 17-18, 2025)

Pakistan Academy of Sciences (PAS) in collaboration with the Ministry of Planning Development and Special Initiative (MoPDSI), Government of Pakistan (GoP), organized the Policy Dialogue titled: “Science, Technology, and Engineering for Development (STED)-2025: Innovate, Integrate and Implement”, under the URAAN Pakistan Program, from April 7-8, 2025 at the PAS Auditorium, Islamabad. URAAN Pakistan is a transformative initiative by MoPDSI designed to spotlight and advance crucial projects and reforms set forth in the 5Es National Economic Transformation Plan. The strategy aims to rejuvenate Pakistan's economy, promote sustainable development, and drive inclusive growth.

Prof. Dr. Aslam Baig (Secretary General, PAS) delivered the welcome address at the inaugural session of the policy dialogue and welcomed the conference delegates and participants. Prof. Dr. Kauser Abdulla Malik (President, PAS) also shared his thoughts on the importance of effective collaboration between Industry, Academia, and Government to strengthen Pakistan's research and innovation ecosystem. Dr. Najeeb Ullah Marwat (Member Science & Technology, MoPDSI) shared insights into how innovation and science-led development are shaping economies around the world and how STED 2025 is not just a roadmap, but a catalyst for Pakistan's leap into a future powered by innovation, collaboration, and sustainable development. Prof. Ahsan Iqbal (Minister for Planning, Development & Special Initiatives of Pakistan) was invited as the Chief Guest at the occasion. In his inaugural address, Prof. Ahsan Iqbal mentioned that Pakistan stood at a critical crossroads and asserted that the nation's future hinged not on the abundance of natural resources but on its capacity to generate, harness and apply knowledge and “We are not here to tinker with the status quo. We are here to transform Pakistan into a techno-economy”. He urged a national pivot toward

realigning Pakistan's science, technology and engineering (STE) infrastructure with its development ambitions. “Pakistan now must reclaim its intellectual heritage not by looking backwards with nostalgia, but by moving forward with urgency, vision, investment and action. In today's global race, nations are not competing over oil and gas, they are competing over talent, ideas, innovation and technology.” Prof. Iqbal pointed to global models including South Korea and Singapore that rose to economic prominence through strategic investments in research, innovation and human capital. He also highlighted that “Today's global competition is not about oil and gas. It's about skills, technology, and the ability to innovate”.

About 150 scientists, academicians, scholars, industrialists, and policymakers attended the event physically and/or virtually. Over the course of two days, the dialogue focused on 19 thematic areas, ranging from biotechnology and AI to energy, health, and climate resilience, offering practical and strategic recommendations to advance national priorities in science and innovation.

The main objective behind the organization of this policy dialogue was to unite leading international and national experts, academicians, researchers, policymakers, and industrial professionals to exchange knowledge, research findings, and practical solutions to address Pakistan's most pressing developmental challenges by leveraging science, technology, and engineering. Guided by the vision to Innovate—Integrate—Implement, STED aimed to develop a complete innovation value chain, connecting academia, industry, government, and entrepreneurship to collectively drive sustainable economic growth and knowledge-based development.



Pakistan Academy of Sciences & Pakistan Science Foundation Launching Ceremony of the Book “Why I Became Scientist” (February 18, 2025)

Prof. Dr. N.M. Butt (PAS Fellow), Chairman, PINSAT, Preston University, Islamabad Campus co-authored the book "Why I Became Scientist". The launching ceremony of the book was organized by the Pakistan Academy of Sciences (PAS) and Pakistan Science Foundation (PSF) in the PAS auditorium, Islamabad on 18th February 2025. Prof. Dr. M. Aslam Baig, Secretary General, PAS, welcomed the honorable guests and all the participants at this book launching ceremony. Dr. Samar Mubarakmand (N.I., H.I., S.I.) participated as the guest speaker and Dr. N.M. Butt presented the book to Dr. Mubarakmand. Prof. Dr. Hamid Saleem, Former D.G., National Center for Physics (NCP), Islamabad, also participated and offered his reflections on the book, appreciating its relevance in promoting

scientific thinking. The main theme of this book is to highlight the achievements of well-known Pakistani scientists. It also shares the challenges and difficulties they faced during their academic journeys. This book will serve as a valuable source of inspiration and motivation for students, encouraging them to move forward in the field of science. It is sure to spark interest in science careers among its readers. Dr. M. Akram Shaikh, Member Science, Pakistan Science Foundation (PSF), Islamabad expressed a vote of thanks to the guest speakers and the participants for their time in making this event outstanding.



Meeting of the Representatives from the Science Council of Asia (SCA), Japan, with the Pakistan Academy of Sciences (PAS) (April 8, 2025)



Meeting of the Representatives from the Science Council of Asia (SCA), Japan, with the Pakistan Academy of Sciences (PAS) held at PAS Secretariat, Islamabad on April 8, 2025, to discuss the framework of the upcoming 24th SCA Conference to be held in PAS Secretariat, Islamabad, in November 2025.

3rd International Conference on Recent Trends in Physics Forman Christian College University, Lahore (April 9-11, 2025)

Department of Physics at Forman Christian College (A Chartered University) organised a 3 – day international conference on recent trends in physics, from 9th – 11th April 2025. This conference was generously funded by Pakistan Academy of Sciences (Punjab Chapter), Higher Education Commission (HEC), Organization of Research Industrialisation and Commercialisation (ORIC), FCCU and the Dean of Natural Sciences office. The scope of the conference included the recent advancements in the fields of plasma physics, material science and condensed matter physics, high energy physics and quantum information theory. Over 100 participants included ten international speakers and several esteemed researchers from various universities and research centres across Pakistan. 13 papers were presented during the plenary sessions, more than 50 papers were presented during the parallel sessions, and around 20 posters were presented

by the students. The talks were recorded and can be accessed from the Department of Physics web page. On 11th April 2025, the conference concluded with the award of shields, certificates, etc. to the speakers, participants, organisers and the poster presenters.



Participants of the 3rd International Conference on Recent Trends in Physics at FCCU, Lahore.

15th Biennial International Conference Symposium on “Infectious Diseases-Aspects of Current Research” at University of Punjab, Lahore (April 14-17, 2025)

15th Biennial Conference held at the University of the Punjab during 14-17 April, 2025. One of the activities was the Symposium on “Infectious Diseases-Aspects of Current Research”, sponsored by the Punjab chapter, Pakistan Academy of Sciences. It provided a dynamic platform for leading researchers to present cutting-edge findings in some infectious disease fields. Chaired by Prof. Dr. Fahrul Zaman Bin Huyop, the symposium featured five key scientific lectures from renowned national and international experts. Prof. Zahra Hasan from Aga Khan University, Karachi, delivered a session with an in-depth analysis of host immune responses to various SARS-CoV-2 variants, underscoring the significance of understanding immune dynamics to inform future public health interventions and vaccine development. Prof. Dr. William James from the University of Oxford, virtually delivered a compelling discourse on pandemic prevention, highlighting the synergistic roles of basic science, public policy, and biotechnology in addressing COVID-19 and shaping preparedness strategies for future global health threats. Dr. Madeeha Afzal from the University of Oxford, UK, continued the session by

showcasing her innovative work on a panel of broadly neutralizing monoclonal antibodies against SARS-CoV-2. Using reverse genetics, her research evaluated the resilience of these mAbs to emerging viral variants, offering valuable insights for next-generation antibody therapeutics. Dr. Shazia Rafique from the Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, delved into the epigenetic consequences of hepatitis C virus (HCV) infection, revealing its potential role in inducing insulin resistance and contributing to metabolic disorders, thus bridging virology and chronic disease research. Prof. Dr. M. Waheed Akhtar, School of Biological Sciences, University of the Punjab, Lahore, discussed the approaches for producing the fusion molecules with high diagnostic sensitivity (> 91%) and specificity, in his laboratory. He stressed that these results are likely to play an important role in establishing a reliable, rapid, and cost-effective serodiagnosis procedure for wide-scale application in resource-limited centers, thus making a major contribution in TB control efforts.



Speakers and participants of the Symposium (left) and the speaker panelists (right).

PAS Sindh Chapter Seminar

“Trained Immunity in High Disease Burden Countries and Its Implications in COVID-19 and Long COVID”

(April 24, 2025)

Pakistan Academy of Sciences (Sindh Chapter) in collaboration with the Section of Neurology, Department of Continuing Professional Education, organized a hybrid seminar titled "Trained Immunity in High Disease Burden Countries and Its Implications in COVID-19 and Long COVID" at the Aga Khan University on Thursday, April 24, 2025. The event brought together national and international experts to explore the emerging concept of trained immunity and its role in COVID-19 and Long COVID. The session was moderated by Dr. Shafaq Saleem (AKU). The seminar was chaired by Professor Alla Guekht, Chair, WHO Long COVID Committee and co-chaired by Professor Rabia Hussain - PAS, TWAS Fellow, Aga Khan University. The program began with introductory remarks by Dr. Mohammad Wasay (AKU) followed by a comprehensive overview of WHO's Long COVID initiatives by Prof Alla Guekht. Professor Rabia Hussain discussed the importance of trained immunity in populations from high disease burden countries and its implications for COVID-19 outcomes. Subsequent talks highlighted various aspects of Long COVID: the clinical

spectrum in asymptomatic and recovered individuals by Dr. Faisal Mehmood, insights from emerging infections by Dr. Aamer Ikram (NIH), and SARS-CoV-2-induced transcriptional dysregulation of host immunity by Dr. Zahir Hasan. Dr. Najeeha Talat Iqbal addressed the specific contribution of trained immunity to Long COVID pathology. Prof Mohammad Wasay presented data on neurological aspects of covid and long covid. Prof Qurat Khan (USA) highlighted psychiatric aspects of COVID, and Prof Saima Hilal (Singapore) presented evidence of dementia after COVID and Long COVID. Session was concluded by Prof Raza Shah, Fellow, Pakistan Academy of Sciences by giving an appreciation of thanks to all the speakers and the participants (attending in-person and online). The seminar emphasized improving understanding of trained immunity, and presumed pathogenesis involved behind clinical disparity observed in high income and low-income countries with SARS-CoV-2 infection.



Group photo of speakers at PAS (sindh chapter) seminar on trained immunity in covid and long covid at Aga Khan University, Karachi.

Prof. Mohammad Wasay (Fellow, PAS) Honored with Hajra Billoo Gold Medal and Research Excellence Award at 6th International Medical Research Conference



Prof Mohammad Wasay receiving Hajra Billoo Gold Medal and Research Excellence Award at 6th International Medical Research Conference organized by Health Research Advisory Board.

Prof. Dr. Sayed Amjad Hussain (Foreign Fellow, PAS) Awarded an Esteemed Honorary Doctorate by the University of Toledo, USA

On May 3, 2025, the University of Toledo (USA) conferred upon Prof Sayed Amjad Hussain the honorary degree Doctor of Humane Letters for his introducing the study of humanities to University's College of Medicine and Life Sciences, his contributions to literature, and his philanthropy. Earlier in 2020 the University had conferred the honorary degree of DSc for his scientific achievements. Dr. Hussain is an emeritus professor in the

College of Medicine and Life Sciences and an emeritus professor of Humanities in the College of Arts and Literature. He is the first person in 150-year history of the University of Toledo to receive dual academic appointments in science and humanities. Dr. Hussain is an internationally recognized explorer, and an award winning writer and photographer.



Mr. Matt Schroeder, president of the University of Toledo (left) and Mr. Patrick Kenny, Chair of the Board of Trustees (Right) place the hood of honorary degree on Dr. Hussain.



Degree recipient Prof. Sayed Amjad Hussain

Prof. Dr. M. Qasim Jan (Fellow, PAS) Received International S&T Gold Medal 2024 Award from the Chinese Academy of Sciences

Chinese Academy of Sciences (CAS) has awarded the International S&T Gold Medal for 2024 to Professor Dr. M. Qasim Jan (Fellow, PAS) for his selfless and vital contributions to promoting China Pakistan Science and Technology cooperation. Dr. Qasim also attended the meeting with Prime Minister Li Qiang in the People's Great Hall and was selected to deliver a speech.



The 2024 Crawford Fund Medal has been awarded to Kadambot Siddique (Foreign Fellow, PAS)

The 2024 Crawford Fund Medal has been awarded to internationally renowned agricultural scientist, educator and collaborator, Kadambot Siddique AM CitWA FTSE. The medal recognises those who have made a considerable and continued contribution to international agricultural research through the Crawford Fund's programs and related activities. Professor Siddique will be presented with the 2024 Crawford Fund Medal at the Crawford Fund's 2025 Annual Conference, to be held in the Great Hall, Parliament House, Canberra on 11 and 12 August 2025. "Professor Siddique has served on the Crawford Fund WA Committee since 1999 and has led and co-led numerous international projects funded by the Australian Centre for International Agricultural

Research (ACIAR) and United Nations (UN) Food and Agriculture Organization (FAO)." Professor Siddique has pioneered research on chickpea, contributing enormously to the Australian chickpea industry. He has bred and commercially released 13 grain legume cultivars (chickpea, lentil, and grasspea). This work is crucial in the context of global warming.



Visit of Delegation from Chinese Academy of Sciences to Pakistan Academy of Sciences (April 2025)

A 4-member delegation from the Chinese Academy of Sciences (CAS) led by Prof. Zhang Lixin, Chairman of the Silk Road Biohealth Agricultural Industry Alliance of Northwest A&F University of Agriculture, visited the Pakistan Academy of Sciences (PAS) in April 2025. Prof. Dr. M. Aslam Baig (Secretary General, PAS) welcomed the delegation and briefed the academic & scientific role of PAS and its achievements. They also discussed possibilities of collaboration on scientific and technical matters of mutual interest. At the end of the meeting, Prof. M. Aslam Baig presented the souvenir to members of the delegation and expressed his heartfelt gratitude for their collaboration and presence.

It is worth mentioning that Prof. Zhang Lixin has a key role in Pakistan's flagship initiative aimed at training 1,000 emerging professionals in modern agricultural practices, to equip with hands-on experience in advanced agro-technologies, climate-resilient farming, and modern agricultural innovations. The first batch of 300 young agricultural professionals from Pakistan participated in an intensive three-month training program at the prestigious Northwest Agriculture and Forestry University (NWAUFU) and Yangling Vocational and Technical College.



Prof. Atta-ur-Rahman Honored Among the World's 500 Most Influential Muslims

Renowned scientist Prof. Atta-ur-Rahman, FRS, has once again secured his place among the world's 500 most influential Muslims in the prestigious 2025 edition of The Muslim 500—a globally recognized encyclopedic volume published by the Royal Islamic Strategic Studies Centre (RISSC), Jordan. Prof. Atta-ur-Rahman's achievements are described in the following words in the Muslim 500:

"His remarkable contributions to science, technology, and education continue to earn him international recognition and solidify his status as a leading figure in the Muslim world. Prof. Dr. Atta-ur-Rahman stands as Pakistan's most decorated scientist, holding an unparalleled record of four prestigious civil awards conferred by the Government of Pakistan: Tamgha-i-Imtiaz (1983), Sitara-i-Imtiaz (1991), Hilal-i-Imtiaz (1998), and Nishan-i-Imtiaz (2002) (Pakistan's highest national civil award). His groundbreaking contributions to scientific research and

his pioneering role in Pakistan's higher education and technological advancements have positioned him as a true visionary, inspiring generations of scientists and scholars worldwide."

This latest accolade is a testament to his enduring impact on the global scientific community and his unwavering commitment to progress in the Muslim world.



Elsevier Sciences Published Three Volumes of “Studies on Natural Product Chemistry,” Edited by Prof. Atta-ur-Rahman

Three volumes of “Studies on Natural Product Chemistry” have been published by Elsevier Science Publishers (Volumes 83, 84 and 85), edited by Prof Atta-ur-Rahman, FRS. The series was initiated under the editorship of Prof. Atta-ur Rahman, FRS, about thirty

years ago and now has become the most comprehensive encyclopedic series of the world in the field of natural products. It covers the chemistry and biological activities of natural products derived from terrestrial and marine organisms.

Prof. Dr. Munir Ozturk (Foreign Fellow, PAS) Co-edited a Book titled: “ALLELOPATHY Bioactive Secondary Metabolites for an Eco-Friendly Agriculture”

1st Edition

Allelopathy

Bioactive Secondary Metabolites for an Eco-Friendly Agriculture

Editors: Münir Öztürk, Fernanda Maria Policarpo Tonell, Waseem Mushtaq, Arpita Roy, Flávia Cristina Policarpo Tonelli, and Khalid Rehman Hakeem.

Publication Date: Forthcoming July 2025

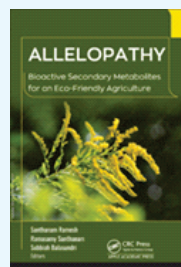
Hard ISBN: 9781774919187

E-Book ISBN: 9781003592815

Publisher: CRC Press Taylor and Francis Group

A combination of review and research chapters written by experts from around the globe, this volume reviews synthetic pesticides and the environmental pollution associated with them and also looks at allelochemicals as useful bioactive secondary metabolites. It discusses allelopathy induction in crops by natural selection, the main pathways involved in allelochemical production, and plant breeding in allelopathy. The volume also

considers the theme of allelopathy and agricultural sustainability, covering plant-based anthelmintic as a new trend to combat helminth infections, the role of microorganisms, the application of allelochemicals against phytopathogens, the role of nanoparticles on fenugreek growth, biotic and salinity stress alleviation in fenugreek, and more. It also reviews genetic engineering approaches to allelopathy. Several chapters discuss the allelopathic potential of specific crops, such as *Leucaena leucocephala*, *Smilax brasiliensis* Sprengel (Smilacaceae), and *Solanum lycocarpum* A. St. -Hil. (Solanaceae).



Prof. Dr. Muazzam Ali Khan Khattak (Fellow, PAS) Co-edited a Book titled: “Connected Health Insights for Sustainable Development Integrating IoT, AI, and Data-Driven Solutions”

Connected Health Insights for Sustainable Development
Integrating IoT, AI, and Data-Driven Solutions

Authors: Shama Siddiqui, Anwar Ahmed Khan, Muazzam Ali Khan Khattak, and Raazia Sosa.

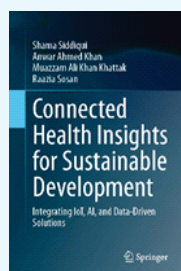
Softcover ISBN: 978-3-031-81432-7

eBook ISBN: 978-3-031-81433-4

Publisher Springer Cham

This book offers a comprehensive look at how emerging technologies like IoT, Data Science, and AI can drive significant advancements in healthcare, particularly in alignment with Sustainable Development Goal 3 (SDG 3) – Good Health and Well-Being. By bridging technological innovation with the critical need for improved healthcare systems, this book explores how these technologies are

revolutionizing both personal and population health management. Readers will gain insights into how IoT-enabled devices, AI-powered analytics, and data-driven decision-making tools enhance everything from continuous patient monitoring to personalized medicine and resource optimization for governments.



Obituary

Prof. Brian Frederick Windley 1936 - 2025

The Pakistan Academy of Sciences mourns the demise of one of its highly distinguished Foreign Fellows, Professor Brian Frederick Windley, in early March 2025. He obtained his BSc from Liverpool University in 1960, his PhD from Exeter University in 1963, and then joined the Geological Survey of Greenland in Copenhagen until becoming a Lecturer at the University of Leicester in 1968, where he enjoyed a highly productive career. He was appointed Professor in 1982 and an Emeritus Professor in 2001. He was also a visiting Professor at the Tokyo Institute of Geology and Geophysics, the Chinese Academy of Sciences in Beijing, and the Indian Institute of Science in Bangalore.

Professor Windley was an internationally established scientist who contributed to the geology of many countries in Africa, America, Asia, Europe, and Greenland. His Google citations were over 59,000, h-index 120, and i10 index 391. Two of his papers on the Central Asian Orogenic Belt of China received citations of 4,036 and 2,662. He was also a highly cited researcher in Web Science 2019.



Professor Windley attended a conference in Pakistan in 1979 on the invitation of Professor Qasim Jan, and from then on, they developed a collaboration, together with Professor Asif Khan of the National Centre of Excellence in Geology, University of Peshawar. This research involved many other scientists from the two countries, resulting in very useful data on the geology and tectonics of northern Pakistan. Five of Professor Windley's joint papers with Drs. Jan and Khan, along with other colleagues, received an average citation of 505. Professor Windley also supported many Pakistani PhD students and post-doc researchers at the University of Leicester. In recognition of his contribution to science and Pakistan, he was elected Foreign Fellow of the Pakistan Academy of Sciences in 2008.