Capital University of Science and Technology

Islamabad Expressway, Kahuta Road, Zone V, Islamabad
Phone: +92 51 111 555 666, Fax: 92 51 4486705
Email: info@cust.edu.pk, Website: http"//www.cust.edu.pk

12th Meeting
of the ORIC Steering Committee
Minutes of the Meeting held on April 29, 2025

- The 12th meeting of the ORIC Steering Committee was held in hybrid mode on Tuesday, April 29, 2025, at 11:00 am in the Workshop Room, B-Block, CUST.

- Dr. Muhammad Mansoor Ahmed, Chairperson of the ORIC Steering Committee and Vice Chancellor CUST, presided over the meeting.

- The following members were present in the meeting physically:

  - Dr. M. Mansoor Ahmed   Vice Chancellor   Chairperson
  - Dr. Nayyer Masood   Dean, ORIC   Member
  - Dr. Muzaffar Abbas   Dean, Faculty of Pharmacy   Member
  - Dr. Amir Qayyum   Professor, CS   Member
  - Dr. Majid Ali   HOD, CE   Member
  - Dr. Abdul Basit Siddiqui   HOD, CS   Member
  - Dr. Nadeem Anjum   HOD, SE   Member
  - Dr. Sohail Ahmed Jan   Associate Professor, BI&BS   Member
  - Ms. Sumaira Ambreen   Assistant Manager, ORIC   Secretary

- The following members attended the meeting online:

  - Mr. Abdul Qadeer   Director, Berkeley   Member
  - Mr. Raise Naqvi   SEO, Electronic Interconnect Engineering (EIE)   Member
  - Mr. Tahir Mahmood Ch.   CEO, Falcon Engineering   Member
  - Mr. Bilal Farooq   Founder, Consulting 360   Member

- The following attended the meeting by invitation:

  - Mr. Muhammad Umair   Assistant Manager Research, ORIC
  - Ms. Aasia   Assistant Manager Innovation, ORIC

- The chairperson welcomed all the members of the ORIC Steering Committee to its 12th meeting. The chairperson then invited Dr. Nayyer Masood, Dean ORIC, to commence the presentation.

- Subsequently, the Committee deliberated upon the following agenda items at length and took the following decisions:

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Item #1   Confirmation of the Previous Meeting Minutes

1.1   It was informed that no other observation on the decisions taken in 11th meeting of the ORIC- Steering Committee held on March 18th, 2025, already circulated amongst the members of the Committee was received. Therefore, the ORIC Steering Committee confirmed the minutes of its 11th meeting.

Item # 2   Drugs Development Cycle in Pakistan – Pharmacy Department

2.1   The Dean ORIC invited Dr. Muzaffar Abbas, Dean of the Faculty of Pharmacy, to present his agenda item on the Drug Discovery and Development Cycle in Pakistan before the house.

2.2   Dr. Muzaffar Abbas thanked the chair and began by articulating the overarching objective of pharmaceutical research to develop safe and effective drugs that improve quality of life and alleviate pain and suffering.

2.3   Dr. Muzaffar Abbas provided an in depth overview of the pre-discovery phase, emphasizing the importance of understanding the pathophysiology of diseases as a foundation for identifying and validating therapeutic targets. This phase involves rigorous scientific inquiry to pinpoint molecular or physiological mechanisms underlying disease, followed by the identification of potential drug targets and subsequent validation to ensure their relevance and feasibility for therapeutic intervention.

2.4   Dr. Muzaffar Abbas then systematically outlined the core steps of the drug discovery process. He described the discovery of lead compounds through general screening and molecular modification, followed by early safety assessments, including organ toxicity and pharmacokinetic studies. The process continues with lead optimization-often involving the development of "me-too" analogs to enhance efficacy and safety profiles-and advances to preclinical trials conducted both in vitro and in vivo using a range of animal models.

2.5   The presentation progressed to the drug development phase, detailing the requirements for an Investigational New Drug (IND) application. Dr. Muzaffar Abbas highlighted the critical documentation required, such as detailed manufacturing information, formulation and stability studies, results of preclinical work, the proposed mechanism of action, potential side effects, and a comprehensive clinical trial plan.

2.6   Dr. Muzaffar Abbas then provided a comprehensive explanation of the clinical trial phases:

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- **Phase-1:** Initial safety assessments in humans.
- **Phase-2:** Efficacy and side effect profiling in a small patient cohort.
- **Phase-3:** Large-scale, double-blinded therapeutic confirmatory trials involving over 5,000 volunteers, leading to the submission of a New Drug Application (NDA) for marketing approval.
- **Phase-4:** Post-marketing surveillance to monitor long-term safety and effectiveness

2.7   The Chairperson and external members, Mr. Tahir Mehmood, Mr. Abdul Qadeer, and Mr. Raise Naqvi, offered valuable suggestions aimed at further enhancing the department's research impact and translational outcomes. Their feedback emphasized the importance of fostering stronger industry-academia linkages, encouraging collaborative research initiatives, and exploring commercialization pathways for pharmaceutical innovations developed at CUST. The committee commended the Faculty of Pharmacy for its dedication to advancing pharmaceutical research and expressed appreciation for the department's commitment to addressing national healthcare challenges through innovative drug discovery and development efforts.

Item # 3   FYPs of Software Engineering Department with an IP Perspective

3.1   The Dean ORIC requested Dr. Nadeem Anjum, Head of the Software Engineering Department, to present an overview of the department's research groups to the committee.

3.2   Dr. Nadeem Anjum expressed his gratitude to the Chair and provided a comprehensive overview of the Software Engineering Department's research groups. His presentation included details of the faculty members involved, their respective research interests, and notable research outcomes achieved by the groups.

3.3   Following the presentation, the Chair and external committee members suggested that for future meetings the department should present at least two to three selected projects in detail to facilitate a more in-depth discussion on projects impact and innovation.

Item # 4   Research Groups of the Department of Computer Science

4.1   Dr. Abdul Basit, Head of the Computer Science Department, presented an overview of the department's active research groups, highlighting the faculty members involved, their research interests, ongoing projects, and student engagement. The following research groups were detailed:

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- **Centre for Research in Computational Intelligence (CRCI)** 1 PhD and 6 MS students are working on this project under supervision of Dr. M. Abdul Qadir, Dr. Syed Saqib Raza, Dr. M. Furqan with focus on research areas Artificial Intelligence, Data Science, Machine Learning, Information Retrieval.

- **Data Management and Analytics** 1 PhD and 1 MS student are engaged in project supervised by Dr. Nayyer Masood and Dr. Samreen (Mirpur University) on research areas Databases and Data Science. Dr. Abdul Basit informed the committee that two projects-E-Link and Sensing, Artificial Intelligence & Edge Networking for Rural Health (SAFE-RH)-have been completed.

- **Center for Software Dependability** 1 PhD and 3 MS students are conducting research under Dr. Aamer Nadeem, Dr. Sabeen Masood, and Dr. Farah Haneef on research areas Software Testing and Reliability, Software Requirements Engineering, Artificial Intelligence, and Machine Learning. Dr. Abdul Basit informed the house that 3 journal publications in the last 2 years have been done and Genetic Algorithm-Based Test Data Generation project is ongoing.

- **Machine Learning and Vision Intelligence** 2 PhD and 3 MS students are supervised by Dr. Masroor Ahmad, Dr. Nadeem Anjum, and Dr. Abdul Basit. These research areas Artificial Intelligence, Computer Vision, Machine Learning, Deep Learning. 12 journal publications in the last 2 years with a total impact factor of 35.89 have been done. Dr. Abdul Basit gave an overview of Erasmus+ Capacity Building in Higher Education: SAFE-Rural-Health and NESCOM AlgoInsight RAC Project.

- **Advanced Network and Security** 1 MS student is working under Dr. M. Siraj Rathore on research areas Computer Networks, Cyber Security, Machine Learning. 7 journal publications in the last 2 years with an accumulative impact factor of 5.56 were published. Dr. Abdul Basit informed the committee that two projects Federated e-Infrastructure Dedicated to European Researchers Innovating in Computing Network Architectures and Carenet: An Architecture for Home-based Healthcare Services.

The committee and chairperson commended the Department of Computer Science faculty's dedication to advancing cutting-edge research and fostering student engagement in high-impact projects.

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Item # 5   **ORIC Activities Brief (January – February, 2025)**

5.1   The Dean ORIC then briefed about ORIC activities during the aforementioned two months:

- **University Industrial Outreach Committee (UIOC):** The Dean ORIC informed the committee about the UIOC visits with their purpose & outcomes. Furthermore, the Dean ORIC also informed the Committee of the ORIC representatives attended the Open House at NIC Islamabad exploring incubation and entrepreneurial opportunities. A short course proposal was submitted to NADRA, and an MoU signing ceremony was held to formalize collaboration.

- **CUST FYP Funding Program COHORT 4:** The Committee was apprised that 6 FYPs have been shortlisted for funding under CUST FYP Funding Program COHORT 4.

- **FYP Calls and Research Proposals:** The house was informed that ORIC circulated calls for FYPs and research proposals, including the Pakistan Science Foundation (PSF) Competitive Research Program (CRP) 2025 and the NRPU Call for Proposals 2025. A total of 14 research proposals were submitted to various funding organizations (PSF & NRPU-HEC).

- **HEC-DELSI (Coursera) Initiative:** ORIC facilitated the submission of 113 applications for enrollment in various Coursera courses under the HEC DELSI initiative, with 98 applications approved by ORIC CUST, supporting faculty and student skill development.

- **Commercial Testing and Industry Engagement:** ORIC coordinated the commercial testing of Civil Engineering (CE) samples, with reports delivered to clients and multiple sample collections managed in collaboration with the CE Department. Engagements included the dispatch of White Oyster Mushrooms to a fruit & vegetable store in F 7, Islamabad, as part of ongoing commercialization and outreach activities.

The Dean ORIC concluded his briefing with a summary of ORIC's routine activities.

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Respecting time constraints, the meeting was adjourned with sincere appreciation expressed to all participants for their valuable contributions and active engagement.

Prepared by:

Endorsed by:

Sumaira Ambreen
Secretary ORIC Steering Committee

Dr. Nayyer Masood
Dean ORIC

Approved by:

Dr. Muhammad Mansoor Ahmed
Vice Chancellor CUST
Chairperson ORIC Steering Committee