

## CURRICULUM VITAE

Zabta Khan Shinwari Ph.D.

*(Fellow-TWAS; PAS & IAS; Tamgha-e-Imtiaz; Sitara-e-Imtiaz)*

*UNESCO Laureate (Avicenna Gold Medalist);*

*Distinguished National Professor/Professor Emeritus, Quaid-i-Azam University,  
Islamabad-Pakistan*

*Vice President Islamic World Academy of Sciences*

*Member of The World Commission on the Ethics of Scientific Knowledge and Technology  
(COMEST)-UNESCO*

<https://youtube.com/channel/UC3qA2YYFOlgTTRuAAdnferQ>



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### Academic Profile

- B.Sc. (Biology) 1980 Peshawar University - Peshawar
- M.Sc. (Botany) 1982 Peshawar University - Peshawar
- M. Phil. (Taxonomy) 1986 Quaid-I-Azam University - Islamabad
- D.Sc. 1994 Kyoto University, (Japan) **(35<sup>th</sup> in QS Ranking 2019)**
- Post Doc Fellow 1996-98 Japan International Research Center for Agricultural Sciences (JIRCAS)
  
- STA Fellow July – Sept. 1999 (JIRCAS-Japan)
- JIRCAS Fellow Jan - March 2001 (JIRCAS-Japan)
- State dept (USA) Feb. 20th –March 18, 2006 State dept./Inst. Int. Edu (USA)Leadership programme
- Post Graduate Transcript online 20 credit hours Richmond Road Bradford West Yorkshire Applied Dual-Use Biosecurity Education Online, UB Number: 10032929/1 (2011). University of Bradford.

### Honours

- Elected Fellow of Pakistan Academy of Sciences in 2008
- **National Civil Award, “Tamgha-e-Imtiaz” 2012 for work on drought tolerant genes**
- **Sitara-e-Imtiaz 2018, acknowledging services in higher education management; S & T productivity and successful Academia-Industry patnerships.**
- **Best University Teacher Award, 2012 (Higher Education Commission-Pakistan)**
- **UNESCO Laureate (Avicenna Gold Medalist for Ethics in Science: 2015)**
- **Pakistan Academy of Sciences constituted an award for young scientist in the name of “Zabta K. Shinwari”**
- **Elected Fellow of Islamic World Academy of Sciences, 2016**

- **Elected Treasurer Association of Academies and Societies of Sciences in Asia (AASSA), 2016-2018 and reelected 2018-2021**
- **Declared among top 2% of the world** whose published research manuscripts have accelerated progress in their respective fields and influenced the productivity of other researchers' work as well **conducted by Stanford university, USA Nov. 2020 and 2021.**  
<https://data.mendeley.com/datasets/btchxktzyw/2>
- Best paper award 2020 "IET Nanobiotechnology: 'Efficacy of green nanoparticles against cancerous and normal cell lines: a systematic review and meta-analysis' H. Barabadi, A. Alizadeh, M. Ovais, A. Ahmadi, Zabta Shinwari and M. Saravanan from Shahid Beheshti University of Medical Sciences, Royan Institute and Mazandaran University of Medical Sciences, Quaid-i-Azam University, Islamabad, National Center for Nanoscience and Technology and Mekelle University. **The Premium Award recognises the best paper published in the last two years in an IET journal.**
- Director Asian Council of Science Editors (ACSE) 2019-2021; Vice President ACSE 2021-2022 <https://theacse.com/board.php>
- **Got PUAN (Pakistan US Alumni Network) Distinguished Alumni Award Year 2022** (US Embassy Function Marriot Hotel, 20<sup>th</sup> Aug. 2022).
- *Distinguished National Professor/Professor Emeritus, Quaid-i-Azam University, 2022*
- *Vice President Islamic World Academy of Sciences (2023-2026)*
- *Elected Fellow of The World Academy of Sciences (TWAS) 2023*

#### ***Scholarships/Awards***

- Merit scholarship - Junior high school studies
- Merit scholarship - F. Sc.
- Merit Cultural Overseas Training Award for Ph.D. (Japan)
- Merit Fellowship for Post Doc. (1996-1998) - JIRCAS (Japan)
- STA Fellow (July 1999 – Sept. 1999) Japan Int. Sci. & Tech. Exchange Center
- Got productivity allowance of Rs. 120,000/-- from PCST for year 2002; 2003 & 2009-12.
- Special increment awarded by Quaid-i-Azam University, declaring most productive Professor of University in 2012; 2013 & 2014.
- **Declared number one biologist/ Biotechnologist by PCST in 2014; 2015 & 2017, got Research Productivity Award in Category "A".**
- **Distinguished Scientists Award by Chinese Academy of Sciences, 2019-2020**

#### ***Professional Experience***

1. Research Officer in U.G.C. sponsored Research Project - Islamabad: December, 1983 to February, 1985:
  - Member of newly established Herbarium in QAU, hosting plant material, especially of upper NWFP and Northern areas
2. Research Associate, Pakistan Museum of Natural History – Islamabad: February, 1985 to August, 1995:
  - Development of Herbarium
  - Display of scientific findings for the benefit of students, researchers, and general public
  - Presented data/findings in schools for awareness
3. **Senior Scientific Officer/Project Incharge**, National Herbarium, National Agriculture Research Centre, Islamabad: August, 1995 to January, 2001:
  - Guided Pakistan Agricultural Research Council to develop their labs on modern lines using Biotechnology and Information Technology

- Made plans to develop Botanical Gardens for economic wild plants
  - Guided farmers to adopt under-utilized crops
4. **Technical Coordinator**, Applied Ethnobotany Project, WWF-Pakistan: Jan., 2001 to Feb. 26<sup>th</sup> 2003.
- Guided local communities in harvesting natural resources sustainably to enhance their income
  - Provided and encouraged alternate sources of fuelwood to reduce pressure on wild plants
  - Introduced better alternatives for existing fodder resources
  - Trained staff and local communities to grow off-season vegetables
  - Facilitated universities in the development of curricula on Applied Ethnobotany
  - Provided universities with reference material for placement in the Resource Centres
  - Delivered lectures on how to involve communities in conserving natural resources
  - Supervised M. Phil/Ph. D students in Applied Ethnobotany
  - Organized Thematic Workshops on critical issues like gender balance, sustainable use of NTFP, poverty alleviation through natural resource uses, etc.
  - Raised funds raised for community participation in conservation (got resources, from TASO-PGR; Toyota Foundation; Shell etc.).
5. **Programme Leader**, COMSTECH-PTCL Frontier Technologies Research Center (CPC), Feb. 27, 2003 to Feb. 26, 2004

COMSTECH-PTCL Frontier Technologies Research Center (CPC) was primarily based on some of the earlier models such as The Abdus Salam International Center for Theoretical Physics and Biology Center in Italy. Had to achieve following some of the major objectives of the center:

- To foster through training and research, the progress of all branches of frontier technologies with special attention to the needs of OIC member states.
  - Training young scientist for research to help in fostering the growth of advanced studies and provide an international forum for personal contacts with emphasis on responding to the needs of science in the OIC member states.
  - CPC was a place where young researchers from OIC member states, given a chance to participate in the great adventure of expanding human knowledge.
6. **Senior Scientific Officer**, Institute of Agri-Biotech & Genetic Resources (IABGR), NARC, Islamabad: Feb. 27, 2004 to Sep. 07, 2004.
7. **Vice Chancellor, Kohat University Science and Technology (KUST)**, KP-Pakistan: Sep. 08, 2004 to Sep. 07, 2006.
- Established all non existing major statutory bodies of the university (Board of Studies, Academic Council, Syndicate etc.).
  - Revised and approved master plan of the university.
  - Developed and approved statutes of the university.
  - Development of 15 years vision document for KUST including all development programmes costing Rs. 9 billion.
  - Development of PC-Is for KUST:
    - (i) Construction of Central Academic Block and Central Library Building Costing Rs.171 million
    - (ii) Construction of three Hostel for 200 Students each, costing Rs.120 million

- (iii) Construction of Foreign Faculty guest house, VC House and Students Service centre, costing 80 million
- (iv) Construction of buildings for Science and Management, apartments for staff, costing 500 million (including HRD)
- (v) Development of Mega PC-I costing Rs.4,090 million rupees
- Signing of MoUs with six national and three international research and teaching organizations
  - University of Tsukuba, Japan
  - Qarshi Research International (Pvt.) Ltd
  - International Center *for* Chemical Sciences
  - Nuclear Institute for Food and Agriculture, Peshawar
  - University of Hazara
  - City University of Science & Information Technology, Peshawar
  - Kohat Forest Division
  - Saga University, Japan
  - National Academy of Sciences, Tajikistan
- Acquired of 2000 kanal land for the university
- Established KUST Institute of Medical Sciences
- KUST stood fourth in the country in research grants and first in the NWFP (HEC's Annual Report, 2004-05).
- Created 350 million rupees as Endowment Fund.
- Student strength grew from 1200 to 3100 and male /female ratio from 94:6 to 81:19, departments from 5 to 12, level of education from Bachelor to Ph.D.
- Submitted linkages projects to HEC- British Council; KUST-Tsukuba, KUST-SES (Germany) (Sent 20 scholars to various countries under these programmes from short term to Ph.D. scholarship).
- Conflict resolution and management (dislodged illegal occupants of University land).
- Reduced number of non-academic staff to 30% (70% academicians, e.g. VC secretariat had 2 staff).
- Quality assurance of teaching & Research (360% evaluation; plagiarism tests; use of computers and multimedia; paperless administration).
- 8. **Vice Chancellor/Project Director**, University of Science and Technology, Bannu (US&TB), KP-Pakistan: May. 09, 2005 to Jan. 16<sup>th</sup>, 2006.
  - Developed and got approved Charter of the university as Model University Act.
  - Development of Master Plan & PC-Is for US&TB:
  - Construction of Buildings Costing Rs.500 million
  - Developing Human Resource
  - Acquisition of land for the university
- 9. **Chief Executive Officer Qarshi Research International/ Vice Chancellor/Project Director**, Qarshi University Lahore: Sep 09, 2006 to Feb. 6, 2009.
  - Developed a Corporate Strategic Plan for attainment of organizational vision
  - Looked after the Research Labs and the testing facilities
  - R & D of the biggest Herbal Industry of Pakistan.
  - Removed middle man for purchase of herbs raw material; signed MoUs with WWF &SDC; trained collectors (encouraged conservation based collection of wild plants)
  - Development of Master Plan for Proposed University
  - Feasibility studies of the proposed Qarshi University
  - Developing Human Resource

10. **Professor, Department of Plant Sciences**, Quaid-i-Azam University, Islamabad: Feb. 7, 2009 to July 23, 2010; **Tenured Professor & Chairman Department of Biotechnology and Bioinformatics**, Quaid-i-Azam University, Islamabad: July 24, 2010 to Mar. 04<sup>th</sup>, 18.

- Teaching and supervising students in field of Bioethics, Biotechnology
- Courses offered for M.Phil & Ph. D. scholars
  - DNA Barcodes in Plants & Molecular Systematics
  - Commercialization of Biotechnology & Advances in Biotechnology
  - Bioethics & Biosafety; Dual use education & Biosecurity
  - IPR& Indigenous knowledge
  - Current Trends in Genomics & Current Trends in Plant Sciences
  - Conservation & Biodiversity

11. **Dean (Faculty of Biological Sciences)**

Looked after 9 departments of life sciences, 2017 -2018

12. **Vice Chancellor**, Qarshi University Lahore: March 05, 2018 to Jan. 2019; Advisor Jan. 2019 to Dec.2020

### **Honorary Positions:**

13. **Secretary General, Pakistan Academy of Sciences**, Islamabad: Jan. 01, 2015 to Dec. 31<sup>st</sup>, 2017 The Academy is a non-governmental and non-political supreme scientific body of distinguished scientists in the country. The Government of Pakistan has given the consultative and advisory status to the Academy “on all problems relating to the development of scientific efforts in the country”, and “generally on such matters of national and international importance in the field of science as may be referred to the Academy”. The Academy is regarded by the public and the government as a repository of the highest scientific talent available in the country, and is generally supported and consulted in all matters relating to scientific education, research and development. The Pakistan Academy of Sciences was inaugurated by the then Prime Minister of Pakistan, Khwaja Nazimuddin, on 16th February 1953. **Sec. General is the CEO of the Academy.**

14. **President, National Council of Tibb (NCT)**, Islamabad: July 07, 2015 to July 06, 2020 Traditional Medicines has been a conspicuous component of the cultural heritage of the Islamic Republic of Pakistan and has played a significant role in providing health care to a large portion of the population. NCT was established in the UAH Act 1965.

15. **Treasurer Association of Academies and Societies of Sciences in Asia (AASSA) 2016-todate.**

16. **Patron in Chief of Pakistan Biosafety Association (PBSA) 20<sup>th</sup> March 2020 todate.**

17. **Professor Emeritus, Department of Plant Sciences**, Quaid-i-Azam University, Islamabad: Oct. 16, 2020 to date:

- Provide guidance or continue research with faculty and/ or students
- Post-graduate student’s supervision
- Seminars and/ or writing scientific articles/books in the field of current trends in plant sciences.
- Mentoring young students specifically BS through special class teaching

18. **Distinguished National Professor, Quaid-i-Azam University, 18-10-2022**

19. **Vice President Islamic World Academy of Sciences (2023-2026)**

### **Academia Industry Liaison**

- Linked farmers with Herbal Industries to sustainable use of herbal medicine to help in income generation
- Established KUST Institute of Medical Sciences with funds from Qarshi Industries
- Bridged and launched a tripartite stakeholders project for ex. Situ conservation of Herbs. Farmers were encouraged to grow High value Med. Plants, directly purchased by Herbal industries, hence ensuring quality raw product.
- Got a research Projects from HEC, Rs. 8 Million, “Re-Evaluation and Standardization of Selected Herbal Products for Export, using biotechnology”. 2005.
- Assisted NUR Foundation and Fatima Memorial System as Chief Advisor in establishing NUR International University Lahore 2012- 2015. Assisted Multan University of Science and Technology in preparation of feasibility (2022).
- **Consultant Advance Education Trust (AET) to establish University of Islamabad 2019.**

### **Fields of Specialization**

Bioethics (Dual Use Education), Molecular Systematics, Agriculture Biotechnology, Medicinal Plants Ecology, Sustainable Development

### **Entrepreneurial experience:**

#### **Ensuring quality assurance of products through national and international accreditation.**

- A) ISO 9001 (UK) (Consistent Quality Products)
- B) Environment Caring Practices (ISO 14001 (UK)
- C) International Quality Standard for Laboratories (ISO17025)
- D) Chemicals & Pesticides Free Products Organic Certification (Netherlands)
- E) International Standard for Proficiency Testing ISO 17043

### **Experience at senior levels in government, or otherwise in positions involving engagement with government officials:**

- Member National Task Force US-Pak Bio-Engagement Programme (Foreign Ministry)
- Member Organizational Review committee of PCST to review S & T organizations (2010)
- Member, Cabinet Civil Award Committee. 2015-2017
- Head, Panel of Review of Degree Awarding Institutes of Pakistan (2015-2018); 2022.
- Member, Technical Advisory Committee of Punjab Healthcare commission.
- As president National Council of Tibb, member of various committees of health Ministries, S & T, NAB etc.
- Member Board of the Authority, Islamabad Health Regulation. 2019-2022.
- Member of Inter-Academy Partnership (IAP) Open Science Working Group to produce a synthesis/summary paper to submit to UNESCO (May 2020).
- **Member Inter-Academy Partnership (IAP) Nominations and Elections Committee. 2021-2022**

## **Preparation of or contribution towards national plans, policy papers, or reports or strategies for national or international entities:**

- As a working group member of WHO on responsible conduct of Science and Dual Use produced: Towards a global guidance framework for the responsible use of life sciences: summary report of consultations on the principles, gaps and challenges of biorisk management, May 2022. Geneva: World Health Organization; 2022 (WHO/SCI/RFH/2022.01). Licence: CC BY-NC-SA 3.0 IGO.
- As COMEST member instrumental in preparing ethics report on Water; Climate change, Food security, land tenure; robotics etc.
- Biotechnology: Opportunities and Challenges in OIC member state countries (An Overview).
- Biotechnology in Developing Countries: Opportunities and Challenges. Qarshi University, Lahore-Pakistan. **ISBN: 978-969-9224-01-0**
- An Introduction to Biorisk Management and Dual Use in Life Sciences. Landau Network Centro-Volta, Italy
- Dual Use Education Concerns in Biotechnology: Pakistani Perspective. **ISBN: 978-969-8223-19-9**
- **Lead Author of “Strategic Plan 2020-2022”** of Alliance of International Science Organisations (ANSO), a project of Belt and Road Initiative of Chinese Academy of Sciences.
- Member of InterAcademy Partnership (IAP) Open Science Working Group to produce a synthesis/summary paper to submit to UNESCO (May 2020)
- Member of InterAcademy Partnership (IAP) Biosecurity Working Group to promote responsible/ethical research practices in the biosciences and related fields, to engage with international organizations and conventions by feeding information into their discussions on the latest scientific developments and providing recommendations, and to engage more IAP member academies in the work of the BWG. (Since Oct. 2020).
- Member WHO working group and Coauthor Towards a Global Framework Guidance on Responsible Use of Life Sciences: Summary Report of Consultations on the Principles, Gaps and Challenges of Biorisk Management 2021.
- Emerging technologies and dual-use concerns: a horizon scan for global public health. Bulletin of the World Health Organisation · October 2021

### **Grants/Funds Secured/Collaborated**

1. Comparative floristic and ecological studies on the temperate elements in North America. 5 million US\$ (300 million Pak Rs.) US-Japan Project
2. Ethnobotany and its application to conservation in Swat-Himalayas (WWF-P). Rs. 5 million. 2001-2003
3. Hindukush-Himalayan Medicinal Plant (WWF and People and Plant Project, UK). Rs. 20 m. 2003
4. HEC – Industry Project of Rs. 8 Million, “Re-Evaluation and Standardization of Selected Herbal Products for Export, using biotechnology”. 2005.
5. Reconstruction of Chromosomal Inheritance in Pedigree of Pakistani wheat Cultivars”. HEC grant of Rs. 6.0 million. 2005.
6. Ecology, Distribution and Management of Tropical Dry Deciduous Forest of Pakistan. WWF-Pakistan (Rs. 0.5 million) 2010

7. Effect of Genetically Modified Crops on Soil Fertility Status and Physiological and Molecular Characterization of Succeeding Crops. HEC (5.1 million) 2010-2012.
8. Survey of Dual Use Education in Pakistan. Bio-engagement programme of USA and Landau Network Centro Volta -Italy (US \$ 17000; 2010-2011).
9. Awareness raising programme of Dual Use Education Bio-engagement programme of USA and Landau Network Centro Volta -Italy (US \$ 17000; 2010-2011).
10. Standardization and Quality Assurance of Medicinal Plants. Pak-US programme, Higher Education Commission-Pakistan. (9 million; 2011-2014).
11. Phytochemical, Proximate Analysis and Biological Investigation of Some Selected Medicinal Plants of Kurram Agency. Pakistan Academy of Sciences (Rs. 1.8 m; 2011-12)
12. Collection, Evaluation and Sustainable Utilization of Crucifer Biodiversity in Pakistan. Pakistan Science Foundation. Rs. 2 million. 2011-14.
13. Phylogenetic analysis of bacterial community composition in Deosai peat land of Pakistan. 0.5 million HEC, 2011-12. Co-PI
14. Phytochemical Investigations, Proximate Analysis and Biological Investigations of some selected Omani Medicinal Plants. US\$ 52000, Funded by Nizwa University, Oman, 2012-13.
15. Molecular Characterization of Potato Leaf Roll Virus (PLRV) from Potato in Hazara Division 0.5 million HEC, 2012-13. Co-PI.
16. International Network of Universities and Institutes for Raising Awareness on Dual-Use Concerns in Bio-Technology. EU-Project through LNCV. Rs. 1.5 m. 2013-2014
17. Useful endophytes in plants with unique surviving to use as yield enhancement organisms. Pakistan Academy of Sciences (Rs. 4 m; 2013-15).
18. Establishment of new Lab in Molecular Systematics. 1.0 million HEC, 2013.
19. "Survey and Awareness of Dual Use Education in Pakistan" Inter Academy Panel (IAP) 2014-15; US\$ 25000.
20. Exploring Biocontrol Potential of Naturally occurring Bacteria. HEC-NRPU2014-15, Rs. 7.4m
21. Exploring Plant Growth Promoting Potential of Halotolerant Bacteria. PAS funded Project 2015-17. Rs. 4m.
22. Building University Capacity in Responsible Science in a Scientific Collaboration Context for BMENA BioScience Forum. Joint Project with Harvard University. PI from Pakistani side. 2015-17. Rs. 10m.
23. Promoting a Culture of Responsible Science in Pakistan: Interdisciplinary Cooperation, Intergenerational Dialogue, and Capacity-Building. State dept. USA-George Town University. Rs. 2 million 2015-2016.
24. Won a grant from InterAcademy Partnership (IAP) and Association of Academies and Societies of Sciences in Asia (AASSA): entitled, "Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health" for US\$ 16,194.35. The themes are also approved. A) Complementary Medicine and SDGS b) Modern Techniques and Complementary Medicine c) Role of Practitioners in Maximizing Benefits of Herbal Medicine.
25. Got a grant of US\$ 20350/-- from AASSA and Inter Academy Partnership for awareness and workshops on PANDEMIC PREPAREDNESS: SCIENCE AND COUNTER MEASURES from March 23-25, 2021
26. Won a Research Grant from Pakistan Academy of Sciences on Anticancer and Antidiabetic Drug Discovery from Medicinal Plants in Pakistan: From Bench to Bed. Rs. 2.54 million 2021-2022.
27. Won a PAS-HEC grant amount of Rs. 150,000/- for holding the **4th International Conference on Applied Zoology (ICZA-2021)**, held on November 24-25, 2021 at the Quaid-i-Azam University.



## ***Research Papers Presented/Invited Lectures Delivered/ Trainings Conducted***

1. Third National Conference on Plant Scientists - Islamabad (1989)
2. Member of the delegation for Regional discussion on Flora and Fauna and Establishment of Quarantine belt for ECO- countries – Tehran (1989)
3. International Seminar on the Management of Arid Lands - Islamabad (1990)
4. Intern. Symposium: Importance of Natural Forest for Environmental Conservation – Kyoto (1991)
5. International Conference on Youth and Hunger - Kyoto (1991)
6. International Botanical Congress Yokohama 28 Aug -3 Sept. (1993)
7. Intern. Symposium: Maintenance, Mechanism & Diversity of Plant Species Population - Kyoto (1993)
8. Intern. Symposium "Karakorum-Hindukush-Himalaya; Dynamics of change" – Islamabad (1994)
9. UNESCO-ICIMOD: Planning workshop on ethnobotany and its application to conservation and community development in the Hindukush/Himalaya - Nepal (1995)
10. International Workshop on Ethonbotany and its application to conservation (1996)
11. International Conference of Plant Physiology - Kyoto (1997)
12. International Conference of Molecular Biology - Kyoto (1997)
13. International Conference of Plant Physiology - Japan (1998)
14. International Conference of Molecular Biology & Genetic Engineering - Japan (1999)
15. 16th International Conference on Plant Growth Substances - Japan (1998)
16. Japan National Conference of Plant Physiology - Sendai (1999)
17. 10th International Conference on Arabidopsis Research - Melbourne (1999)
18. Conference of Molecular Biology - Japan (1999)
19. International Seminar on Biotechnology for Development – Islamabad (2000)
20. NIBGE-PARC Training Course on Molecular Breeding - Faisalabad (2000)
21. Genomics and its application - Islamabad (2000)
22. Nepal-Japan Joint Symposium on Conservation of Natural Medicinal Resources and their Utilization – Kathmandu (2000)
23. Workshop on Application of Ethnobotany to Participatory Forest Management – Abbotabad (Chief Organizer) (2001)
24. IUCN workshop on Economics and Biodiversity Conservation: Awareness, Review and Exploration – Islamabad (2001)
25. NWFP, Biodiversity Group workshop – Peshawar (2001)
26. JIRCAS Workshop on Genetic Engineering of Crop Plants for Abiotic Stress – Bangkok (2001)
27. Consultative workshop on Land Tenure & Resource Ownership, Swat (Chief Organizer) (Sep. 2-4, 2002)
28. Training workshop for collectors of Medicinal Plants in Swat (Oct. 3, 2002)
29. Participated in International Orientation Program of WWF in Switzerland (Sep. 22-26, 2002)
30. Workshop on Health Challenges of 21<sup>st</sup> Century and Herbal Medicine in SAARC countries (Nov. 4-6, 2002 Islamabad)
31. Regional workshop on Wise Practices and Experiential Learning in the conservation and Management of Himalayan Medicinal Plants, IDRC, WWF-Kathmandu Dec. 15-20, 2002 (Member, Tech. Com, Draft Com).
32. Training workshop on Modern Techniques in Biotechnolgy. NIBGE 2-7 March, 2003

33. International Workshop on Dialogue and Promotion of Bioethics in Asia. Held In Meritus Mandarin Hotel, Singapur, March 9-10, 2003. Organized by Prof. Ryuichi Ida, Kyoto University Japan.
34. Guest speaker in Seminar on Himalayan Medicinal Plants. Kitasato University, Japan. April 12, 2003.
35. Special lecture on efforts to conserve and sustainable use of Medicinal Plants of Pakistan. Showa University, Japan. April 17, 2003.
36. Organiser of International Workshop on Bioinformatics. COMSTECH-Pakistan, April 22-25, 2003. (Presented Two lectures).
37. Co-Organizer COMSTECH-Forum on BIOMetrics: Identification Technology for a Secure World. June 24, 2003.
38. Participated in International workshop on Vaccine Production and Utilization In Developing Countries: Issues, Prospects And Implications For Pakistan. Agha K. University Karachi. August 08-10, 2003
39. Co-Organizer H.E.J, COMSTECH, TWAS International Workshop on the development of Medicines from Plants. HEJ, Karachi-Pakistan. Sep 8-13, 2003.
40. Dialogue and Promotion of Bioethics in Asia. Kyoto-Japan. Sep. 21-24, 2003
41. Co-Organizer International Workshop on Conservation and sustainable use of Medicines from Plants. WWF-MINFAL-Qarshi-Islamabad-Pakistan. Dec 2-4, 2003.
42. Organizer COMSTECH-NIBGE International workshop on Advanced Techniques in Biotechnology. NIBGE-Faisalabad-Pakistan. Jan. 5-17, 2004.
43. Co-Organizer IDB-COMSTECH-INTROM-IMR International Workshop on Herbal Medicine, 16-20 Feb., 2004. IMR Kuala Lumpur, Malaysia.
44. Participated in Workshop on Bioethics, March 12-13, 2004 by PMRC & COMSTECH.
45. Resource Person in NIBGE-FAO workshop on GMO detection, NIBGE Faisalabad, June 14-17, 2004.
46. Presented a Paper on "From basic to applied science of botanicals and its industrial applications" in International Workshop on "Industrial Applications of Basic Sciences", Organized by COMSATS, Best Western Hotel, Islamabad July 5-7,2004.
47. Organized an International Symposium on "Medicinal Plants: Linkages beyond National Boundaries", Sep. 7-9, 2004. Presented Two papers.
48. Paper presented in a workshop entitled, "Genetics For Medical People", Institute of Mol. Genetics, Karachi. Dec. 2004.
49. Paper presented in a workshop entitled, "Modern techniques in Biotechnology", Hazara University. Dec. 01, 2004.
50. Paper presented in "International Conference on Biotechnology for salinity and drought tolerance in Plants" 28-31, March 2005, NCB-Pakistan.
51. Organized a symposium on Current status and future intervention of Biodiversity of Afghanistan as a side event of IBC: Vienna- Austria July 17-24, 2005. Presented two papers.
52. National Education Forum, organised by HEC (Sep. 21-22, 2005).
53. National Workshop of core group of Chemistry at Riphah Islamic University (23-9-05)
54. International Training Course on Traditional knowledge and drug development. (Feb. 14-15, 2006). HEJ-Karachi.
55. Key Note speaker at Pakistan Botanical Conference at Sindh University (Feb. 13, 2006).
56. Visited Japan and signed MoU with Tsukuba University, presentations on collaboration between KUST and NIAES, JIRCAS, Ochanomizo University and RIKEN. June 22 to July 2<sup>nd</sup>, 2006.

57. Delivered lecture at Life Science Workshop on Advances in Ecology at Karachi University on Use of DNA and Genomic data and Ecology on July 3-4, 2006 (Chief Guest at Inauguration ceremony).
58. HEC sponsored workshop on Life Sciences “Role of Botanical Gardens in Life Sciences” Bot. Dept. Peshawar Univ. Nov. 23, 2006.
59. HEC sponsored workshop on Life Sciences “Weeds threatens Biodiversity” Weed Sci. Dept. NWFP Agri. Univ. Peshawar, Dec. 12, 2006.
60. Delivered lecture at National Conference on Prospects of Ethno-veterinary Medicine Research and Development in Pakistan 16-17 Feb. 2007, at University of Agriculture Faisalabad (Chaired two sessions).
61. Delivered talk on “Ethnobotany: Success and Future perspective” in International Conference “Biological resources of Pakistan: Problems, success and future perspectives” at Univ. Arid Agri. Rawalpindi, 25-27, April, 2007.
62. Participated in Bio-Asia (The Global Bio Business forum), Feb. 7-9, 2008, Hyderabad-India.
63. Participated as resource person in HEC workshop on “Identification techniques in Botany” at Jamshoro, Sindh. March 2008
64. Participated as key note speaker on “Indigenous knowledge & modern Science” in International Botanical Conference, at Faisalabad Agric. Univ., 21-24 April, 2008.
65. Participated as guest of honour in COMSATS TechnoMoot 2008, presented a talk on “Research for Wealth Generation” on May 13, 2008.
66. Presented a talk on Biodiversity, Botanicals & Biotechnology in Second National Conference on Health Biotechnology, by NCB at Pakistan Academy of Sciences, May 27-28, 2008.
67. First meeting of the Coordinators of the Scientific Thematic Groups for Enhancing Cooperation among Islamic Countries. 10-12 March, 2009, COMSATS-ISESCO, Islamabad
68. Presented data on “Invasive species: threat to wild vegetables” in Seminar on “Impact of Invasive species on Biodiversity” by HEC-Karachi & Urdu Universities 9-10, June, 09.
69. Participated in Consultative Meeting on Commercialization of Health Biotechnology, June 15, 09 at Sheraton organized by NCB.
70. Presented a paper “Wealth generation through research: A case studies” in Policies and Strategies for Successful Implementation of Employment Generating Programmes in Renewable Energies, Biotechnology, Agriculture, Environment and ICTs *By COMSTECH Secretariat, Islamabad August 11-12, 2009*
71. Workshop on Ethical Issues in Research on Human Subjects. Organised by Aga Khan University Medical College’s Bioethics Unit, in collaboration with Johns Hopkins University Bloomberg School of Public Health, USA and the World Health Organization Eastern Mediterranean Region on October 14, 2009 at Serena Hotel, Islamabad.
72. Consultative Workshop on Progress towards Implementation of Biodiversity Targets for 2010. Ministry of Environment, Islamabad. 14-11-2009
73. National workshop on Adaptation and Implementation of Good Agri. & collection Practices (GACP) and Field Collection Practices (FCP) Guidelines, April 5-6, 2010 (NIH-Islamabad) Chaired a session.
74. US-Pak Bio-Engagement Workshop in Cairo, Egypt 3-6 May, 2010 (Presented a Project on Dual Use Education).
75. Organized International Conference on RESPONSIBLE CONDUCT OF SCIENCE, 9-10 JUNE 2010. Facilitated Group discussion and presented paper. COMSTECH.
76. Participated in US-Pak Bio-Engagement Workshop in Istanbul, Turkey 16-20 Sep., 2010 (Got a Project on Dual Use Education of US\$ 76K; Approved).

77. Participated in a workshop on “International Engagement: Bioscience for a safe and secure society”. Organized by AAAS (USA) in Intercontinental Hotel, Amman (Jordan), Oct. 3-6, 2010. <http://cstsp.aaas.org/InternationalMeeting/index.html>
78. Presented an article entitled “Towards Greener Asia: Poverty Reduction helps in Conservation & Sustainable Use of Biodiversity” in 2010 AASA International Symposium on ‘One Green Asia’ 18-22 Oct., 2010 in Hotel Kyo-yuk Mun-hwa Hoekwan, Seoul, Korea, Hosted by The Korean Academy of Science & Technology.
79. Presented an article entitled, “The Dual-Use Dilemma and the Responsibilities of Scientists in Pakistan” in International workshop “Global Networking to Promote Biosecurity and Limit Dual Use Risks. The Science-Ethics-Security Nexus” 12-13 Nov., 2010 organized by Landau Network-Centro Volta, Como Italy.
80. Participated in International workshop “Securing Dual Use Expertise: Developing Sustainable Global Engagement and Outreach Programmes” 15-16 Nov., 2010 organized by Landau Network-Centro Volta, Como Italy.
81. Participated in the Steering committee meeting of Biosecurity Biosafety International Conference (BBIC) held in Beirut, Lebanon 13-14 Dec., 2010.
82. US-Pak Bio-Engagement Workshop in Cairo, Egypt 15-17 May, 2010 (Discussed the details of the Project on Dual Use Education, which got approved for US\$ 72000).
83. National Seminar on Biodiversity Conservation at NARC, Islamabad on Dec. 21, 2010, presented a paper entitled, “Impact of Biodiversity Loss on Human Health and Socio-Economy of Rural Communities.
84. National Symposium on Floristic Biodiversity and Conservation at Fed. Urdu Univ. Arts S & T at Karachi on Dec. 22, 2010, presented a paper on DNA barcodes of Land Plants.
85. National Consultative Workshop for Mapping Inter-Sectoral Linkages in Policy, Planning & Legislation between Forest & Water Sector Jan 06, 2011. Lead at Hill View Hotel, Islamabad.
86. Presented a paper on “Biocontrol Agents & Illicit Drug Plants: A Dual Use Scenario” in Workshop on Conduct of Responsible Science, organized by FC College Univ., Lahore: 31 Jan. to 1 Feb., 2011.
87. Focal Person and presented article on Synthetic Biology and its Dual Use in International Workshop on Synthetic Biology at COMSTECH, Islamabad 3-5 Feb., 2011.
88. Participated in 2<sup>nd</sup> International conference of Plant Sciences and 11 Conference of Pakistan Botanical Society Feb. 22-24, 2011 at GCU-Lahore. Presented paper on Dual Use Education and Illicit Drug Plants, co-chaired a session and was elected as next President of the Society.
89. Participated in International Workshop entitled, “International Engagement: Responsible Science for a safe and Secure Science” in Regency Hotel Kuwait, by AAAS & KISR 13-16 March, 2011. Part of Panel discussing Bioethics & Dual Use Education.
90. Pakistan-US Science and Technology Conference. March 21-24, 2011, Sofitel Jumeirah Beach Hotel. Dubai, UAE. Pakistan. Presented two papers on a) National Framework for Biorisk Management, and Standardization and Quality Assurance of Medicinal Plants.
91. Participated in International Workshop on “Frontiers in Molecular Biology & Biotechnology”, presented a talk on “DNA barcodes in Land Plants” at COMSTECH Islamabad. 28-30 March, 2011.
92. International workshop on Current trends in Halophytes Research, 11-13 April, 2011 at Institute of Sustainable Utilization of Halophytes, University of Karachi (Presented article on From Salinity tolerance to Extremophiles: biotechnological inputs)
93. Organized International Consultative Workshop on “Educational Materials on Bioethics, Biosafety, Biosecurity and Dual Use Education” at Quaid-i-Azam University with LNCV (Italy) & BEP (USA) on May 24, 2011.

94. National Biodiversity Symposium 7-9 June, 2011; PMNH-Islamabad (Presented article on Biodiversity: Neglected areas. Chaired two sessions.
95. World Environment day's Congress on Forests: Nature at your service. Organized by Pakistan Engineering congress, Lahore on June 16, 2011. Presented article on Human Infectious disease link to Biodiversity loss.
96. Taking Biosecurity Networks to the Next Level. Organized by Virtual Biosecurity Center at The Renaissance Mayflower® Hotel, Washington, DC 20036. Sep. 01, 2011. Participated online.
97. Participated in Biosafety and Biosecurity International Conference (BBIC) 2011 at Royal Scientific Society Campus-Amman, Jordan 12-15 Sep. 2011; Presented article on Synthetic Biology and Dual Use issue, also chaired a session.
98. *Participated in PARC-TASO-PGR National Workshop on 'Conservation and Sustainable Utilization of Medicinal Plants in Pakistan'*. Institute of Agri-Biotechnology & Genetic Resources, NARC, Islamabad. (October 4-5, 2011). Presented a paper on Medicinal Plants Research and Pakistani Scientist's Problems.
99. Participated in Workshop on Development of National Response Strategy to Combat Impacts of Climate Change on Forest of Pakistan. Organized by Pakistan Forest Institute, Peshawar Pakistan Academy of Sciences, Islamabad on 5<sup>th</sup> October, 2011.
100. US-Pak Bio-Engagement Workshop in Istanbul, Turkey 03-05 November, 2011. Presented Project Report on Dual Use Education: Gap Analyses and Survey. (Got extension of Project for Survey of Practitioner Researchers (US\$ 25000 and 20 Awareness raising workshops for Policy makers and Researchers US\$ 180,000.
101. Presented an article on "Ethics in Life Sciences: From theory to the real world" in Third ICLS-KIBGE International Conference on Responsible Conduct of Science. November 13-16, 2011.
102. IWG – LNCV Biosecurity Workshop and Round Table "Biosecurity, Biosafety, Human Capital and the Seventh Review Conference of the Biological and Toxin Weapons Convention". Organized by International Working Group, Landau Network Centro Volta Como, Italy. 18-19 November 2011
103. Participated in HEC-QAU workshop on Strategic Planning, held at Quaid-i-Azam University, Islamabad Nov. 29-30, 2011.
104. Organized International Workshop on "Medicinal Plants: Conservation & Sustainable Use" *Pak-US Joint Initiative*. Quaid-i-Azam University (QAU), Islamabad- Pakistan, 8-10 December, 2011. Funded by Pak Academy of Sciences and WWF-Pakistan.
105. Organized International Conference on "Greener and Safer South Asia" at COMSATS Islamabad, sponsored by HEC Dec. 10-11, 2011. In sideline meeting of South Asian Federation of Japanese Universities Alumni Associations (SAFJUAA), was elected President SAFJUAA.
106. Presented an article on "Biosafety, Biosecurity: International Obligations, National Scene and Dual Use Education" in International Workshop on Advances in Genetic Engineering of Plants, held at COMSTECH, Islamabad 20-22 December, 2011.
107. Coordinator QAU-DAAD International Summer School on "Recent Advances in Plant Biotechnology for Sustainable Development (Exploring the Hidden Potential of Microorganisms. March 26-28, 2012, QAU-Islamabad.
108. Participated in a workshop on International Engagement in Genetics and Epigenetics: Responsible Science for a Safe and Secure Society, March 29-30 2012, Dubai, UAE. *Under the patronage of Chairperson of Dubai Healthcare City Authority HRH Princess Haya Bint Al Hussein, & AAAS-USA.*

109. Presented an article in *Workshop on Higher Education and Professional Responsibility in CBRN Applied Sciences and Technology Across the Sub-Mediterranean Region* April 3-4, 2012 Organized by UNESCO-Venice-Italy.
110. Presented two papers and chaired a session in the International Symposium on “Strategies for Conservation of Endangered Ecosystems” to be held on April, 16-18, 2012 at Department of Botany, University of Agriculture Faisalabad, Pakistan.
111. Co-Organized and presented article on “Biodiversity loss, Emerging Infectious diseases and its Impact” in International Conference “Climate Change: Opportunities and Challenges” 9-11 May, 2012 at NUST, Islamabad.
112. Participated in “SAARC Regional Conference on New Frontiers in Agricultural Genomics and Biotechnology”. June 5-7, 2012, NIGAB-PARC at Marriott, Islamabad. Presented an article on Nexus of Biodiversity Loss, Metagenomics and Emerging Infectious Diseases.
113. Presented a talk on “Biotechnology in 21<sup>st</sup> Century” in a seminar at University of Wah, on 12-6-12.
114. Participated in Expert Group Consultation for Protected Areas Gap Analysis- 26 June, 2012, IUCN-Islamabad
115. Participated in Pakistan & Chinese Academies of Sciences (PAS-CAS) Bi-national conference on Nano Science & Technology, Network Security & Environment at Pak. Acad. of Sciences, Islamabad.
116. Chief Organizer of 12<sup>th</sup> NATIONAL & 3<sup>rd</sup> INTERNATIONAL CONFERENCE OF BOTANY. Organized By Pakistan Botanical Society & Quaid-i-Azam University Islamabad, Pakistan. September 1<sup>st</sup> – 3<sup>rd</sup> 2012.
117. Participated In International Workshop On High Altitude Ecosystems And Climate Change. September 3-5, 2012. Presented A Paper On “COMSTECH, Islamabad.
118. Participated “International Conference on Conservation of Biodiversity in the Desert Areas: Present Status, Threats & Remediation” ISESCO- Rabat, Morocco. Sep. 13-14 Sep., 2012. Presented Paper, “Nexus of biodiversity loss in desert ecosystems, metagenomics & emerging infectious diseases”.
119. Participated in Third Meeting of International Biotechnology Advisory Committee (IBAC) on New Trend in Biotechnology research and their potential in Member States. Organized by ISESCO, in Days Inn Hotel, Jordan Sep. 25-27, 2012. Presented a Talk on, “Biotechnology in Pakistan: Prospects and Challenges”.
120. Participated in The Fourth ICLS-KIBGE Conference On "Science, Technology & Engineering: Innovative, Yet Responsible!" at KIBGE on Oct 18, 2012.
121. Member Technical Committee of 10<sup>th</sup> International Bhurban Conference on Applied Science & Technology, held at Center of Excellence in Science & Applied Technologies, Islamabad (National centre for Physics) 15-19 Jan., 2013, presented a paper on Synthetic biology in relation to infectious diseases & dual use issues.
122. Pakistan–U.S. Science and Technology Symposium, held in Islamabad at National University of Sciences and Tech., 31<sup>st</sup> January and 1<sup>st</sup> February 2013. Presented a talk on Standardization and Quality Assurance of Medicinal Plants, using bar codes.
123. Participated in seminar on “Role of Drug Regulatory Authority of Pakistan in Regulation and Development of Traditional medicine System in Pakistan. Feb. 13, 13; Holiday Inn, Islamabad, organized by Pak. Tibbi Pharmaceutical Manufacturers Association (PTPMA).
124. Participated in International workshop “Primary Connections Collaboration with Asia”. Organized by the Australian Academy of Science, Menzies Hotel Sydney March 24-27, 2013.

125. Presented a key note paper entitled, "Celebrating Biodiversity day in 21<sup>st</sup> Century: Prospects and Challenges" in University of Swat in Symposium, "Celebration of International Biodiversity Day 2013 on the theme Water & Biodiversity" on May 22, 2013.
126. Presented a key note paper entitled, "Recent trends in studying Biodiversity's impact on Humanity" in a conference on "Plant Biodiversity Conservation and Sustainable use of Biodiversity Day Plant Wealth of Pakistan" at For Plant Conservation (Herbarium and Botanic Garden), University Of Karachi. June 27-28, 2013.
127. Participated in Educational Institute on Responsible Research in KUALA LUMPUR, AUGUST 17-22, 2013 AS A Committee member on south and south-east Asia initiative on education about Dual use issues in science: A faculty development institute
128. Delivered a talk in Ohio University Athens (USA) entitled, "Molecular Systematics and Applied Ethnobotany in Pakistan" on Friday, Sept. 27, 2013 in Porter 104.
129. Delivered a talk on Gap analysis & Dual Education in Pakistan. In International conference *Biology, Chemistry and Biosecurity: Implications of Convergence for Biosecurity and Recent Advances in the Education of Life Scientists* on 14-15 October 2013 at the Hilton Hotel, Bradford, Organized by Bradford University.
130. Presented a talk on "The Gender Gap in Entrepreneurship: Issues and Challenges" in International Conference on "Enterpreneurship for young women and using of new technologies: Issue and Challanges" organised by NASIC at Fatima Jinnah Women University, Rawalpindi, 26-27 Nov. 2013,
131. Facilitated Conference on Medicinal and Aromatic Plants (MAPs) Cultivation study organized by USAID ENTREPRENEURS Project to be held on 28 November 2013 in Serena Hotel, Swat.
132. Co-organizer of "Symposium on Application of Frontier Technologies in Conserving Biodiversity and Studying Climate Change", at SBB University Sheringal, Dir, 29-30 Nov. 2013, presented a paper on "Potential Dual Impact of Frontiers in Biotechnology on Biodiversity Conservation".
133. Presented a paper on "Gap Analysis of Awareness level to assess Biosecurity risk in Pakistan" in a conference on " Natural or Deliberate Outbreak – How to Prevent or Detect and Trace its Origin:Biosecurity, Surveillance, Forensics" 5-6 Dec. 2013, Warsaw, Poland.
134. Participated in the Center for Environmental Risk Assessment (CERA), & ILSI Research Foundation, workshop on "The Biosafety Research in Pakistan: Grants Program" at CIIT, Islamabad on Dec. 13th, 2013.
135. Participated in 11<sup>th</sup> International Bhurban Conference on Applied Science & Technology, held at Center of Excellence in Science & Applied Technologies, Islamabad (National centre for Physics) 15-17 Jan., 2014, chaired a session.
136. USAID's Entrepreneurs Project Pakistan Industry Conference 2014 for Medicinal and Aromatic Plants (MAP) and Honey, as one of the panelists, Serena-Islamabad, Feb. 3, 2014.
137. Delivered a special talk on Synthetic biology in relation to infectious diseases & dual use issues, at Pakistan Academy of Sciences. Feb. 13, 2014.
138. Participated in International Seminar on Fundamentals of Intellectual Property (IP) organized by Commercial Law Development Program (CLDP) *Jointly with* Higher Education Commission of Pakistan (HEC) at Bahria University, Islamabad, Pakistan on Feb. 19, 2014.
139. Presented talk on, "Towards Greener Pakistan: Poverty Reduction helps in Conservation & Sustainable Use of Biodiversity" in International Conference of Biochemical and Chemical Sciences ICBCS- Feb. 24-26, 2014 under theme Go greener for Sustainable Economy, at Agriculture University, Faisalabad, Chief Guest in Concluding Ceremony.

140. Chief organizer of International Workshop on ‘Raising Awareness on Dual Use Concerns in Biotechnology at Quaid-i-Azam University, under EU CBRN CoE PROJECT 18 *International Network of Universities and Institutes for Raising Awareness on Dual Use Concerns in Bio-technology. March 25, 2014.*
141. Presented a paper, “How to regulate abiotic stress tolerance in Plants: Role of DREBS”, in International Symposium on Strategies for Overcoming Food Security Problems through Utilization of Rain Fed Areas”. At Sargodha University March 26-28, 2014.
142. Participated in International workshop on the Awareness of the Institute on Responsible Science, organized by National Academy of Sciences (USA) & Academy of Science Malaysia at Kuala Lumpur, April 1-2, 2014.
143. Presented a lecture on Application of Bioinformatics in emerging technologies in 5<sup>th</sup> One day Workshop on “Bioinformatics” at MAJU-Islamabad on May, 10, 2014.
144. Participated in Inter Academy Panel International Conference, on “Dual use of innovative technologies” 16 May 2014, Poznań, Poland under Polish Academy of Sciences. Presented a paper on, “Biosafety, Biosecurity of innovative technologies: Background, International Obligations, National scene in Pakistan, Dual Use Education”.
145. Participated in one day conference “Celebration of Biodiversity day”, organized by SBBU, Upper Dir, at the Chitral Campus on May 22, 2014; presented a talk on “Role of Biotechnology in Biodiversity loss and conservation”.
146. Organized an international workshop on “*Strengthening the Culture of Responsibility: Dual Use Research & Biosecurity*” at SBBU, Upper Dir, at the Chitral Campus on May 23-24, 2014. Presented a talk on ““Biosafety, Biosecurity and our Legal Obligations””.
147. Participated in International conference on “Science, Technology and Engineering for development: from innovation to implementation” on 3<sup>rd</sup> June 2014 at the Marriot hotel, organized by USAID & HEC
148. Delivered a talk entitled, “DNA Barcoding of Medicinal Plants/Herbal Medicine” in Biotech Cluster Annual Conference, at FCC University Lahore, Aug. 18, 2014.
149. Participated in 4<sup>th</sup> International and 13<sup>th</sup> National Conference of Botany, Aug. 27-30<sup>th</sup>, 2014 at SBBUniversity-Sheringal, Dir. Spoke on “Why Discuss Research Integrity?”
150. Presented a talk on " Emerging pathogens and dual use issues" in International Conference on Emerging Trends in Life Sciences for Sustainable Development” (9-11<sup>th</sup> October) organized by the Biological Sciences Deptt. at Forman Christian College, Lahore.
151. Presented a paper on "Prospects and Opportunities of Using Biotechnology for Agriculture Development in Pakistan" in 3<sup>rd</sup> Summit of South Asian Academies. International Symposium, "Achieving Sustainable Agriculture through a Biotechnological Revolution" Organized by UNESCO regional centre for Biotechnology Indian National Science Academy, New Delhi. 13-17 Oct. 2014.
152. Presented a paper on Biodiversity Loss, Emerging Infectious Diseases /Functional Metagenomic of Extremophiles, Endophytes and Their Impact" in International Conference on Himalayan Biodiversity And Climate Change: Challenges And Opportunities, October 20-21, 2014. University Of AJKashmir, Muzaffarabad.
153. International Network Workshop of EU CBRN CoE Project 18: *International Network of Universities and Institutes for Raising Awareness on Dual-use Concerns in Biotechnology*, Como, Italy, 26-27 November 2014.
154. Resource Person in Faculty Development Academy, 4-Day Workshop on “Research Methods & Techniques for Pure Sciences” Dec. 08 – 10, 2014, COMSATS HQ, Islamabad.
155. Focal person in Life Sciences to prepare a new OIC Plan of Action (2016-25) for S&T in OIC Countries. COMSTECH Dec. 15-16, 2014.
156. Participated in Regional Conference on Development, Democracy and Peace organized by Lead Pakistan at Serena Islamabad on 20<sup>th</sup> Dec. 2014.



157. Presented action plan for life sciences in Consultative Meeting of "Head of OIC organizations": COMSTECH-Islamabad. Dec. 24, 2014.
158. Participated in 12<sup>th</sup> IBCAST 2015 (Jan 13<sup>th</sup>- Jan 17<sup>th</sup>), held at Center of Excellence in Science & Applied Technologies, Islamabad (National centre for Physics). Theme: "Emerging infectious diseases and biosurveillance". Presented a paper on "Natural or Deliberate Outbreak in Pakistan: How to Prevent or Detect and Trace its Origin: Biosecurity, Surveillance, Forensics".
159. Visited National Academy of Sciences, Belarus and Belarus State University, presented Science Activities in Pakistan, March 14-18, 2015.
160. Organized IAP "Policy Makers and Practitioners Awareness International Workshop on Dual Use Education" (March 30, 2015) at Pakistan Academy of Sciences, Islamabad.
161. Plenary lecture entitled, "Why do a "Plant Scientist" needs to "Love Computational Biology" in 3rd National Computational Science Conference (NCSC 2015) May 13-15, 2015 *Organized by:* Pakistan Society for Computational Biology (PSCB) and Institute of Space Technology, Islamabad.
162. Presented a keynote article on "Quality Assurance of Herbal Medicine", for the "Turkish Natural Nutrition and Lifelong Health Summit" in Sapanca- Turkey from 21-23 May 2015, organised by Yuksek Ihtisas University, Ankara, Turkey.
163. Presented a paper entitled, "Medicinal Plants of Pakistan threats and opportunities for sustainable business development" Workshop on Non-Timber Forests Productq (NTFPs) and Medicinal & Aromatic Plants, in Serena Hotel, Swat on June 9th, 2015, organised by Mountains and Markets Project, UNDP-Pakistan.
164. Presented a paper entitled, "Medicinal Plants of Pakistan: Farmer to Pharmaconcept" in National Workshop on 'Potential of Value Addition and Health Benefits of Indigenous Herbal Wealth and Functional Foods' on June 17, 2015, by PCST at PAS Islamabad.
165. Participated in Asian Council of Science Editors annual meeting. Aug. 13-14, 2015, Metropolitan Palace Hotel, Dubai. Presented views on "Dual Use Education and Right to Publish". Also attended short courses on "Developing a Successful Journal and Marketing for scholarly Journals".
166. Participated in 11<sup>th</sup> AASSA Regional Workshop in Korea on "*Gender Issues in Science Research and Education*" 26-28th Aug., 2015, presented a paper on, "*The Gender Gap in Science and Technology in Pakistan: Issues and Challenges*" and chaired a session.
167. Delivered a talk on "Pakistan's bio-preparedness with regard to biosecurity, biodefense strategies and policy measures" in 4th International Molecular Biology and Biotechnology Congress & Conference on Life Sciences Research 2015. At Isra University, Islamabad Campus, 4-6 Sep. 2015.
168. Participated in S&T Trends Symposium to support the BTWC. 13-16 Sep. 2015, Polish Academy of Sciences, Warsaw. Delivered a talk on, "Practising Ethics in Science in Developing Countries: Lessons from Pakistan" and Chaired a session.
169. Delivered a talk to UNESCO-Paris-France on "Practising Ethics in Science in Pakistan: An overview" on Sep. 30<sup>th</sup>. 2015.
170. IUCN Consultative workshop on National Biodiversity Strategy and Action Plan (NBSAP) on October 21, 2015. Presented data on Synthetic Biology impact on Biodiversity.
171. Delivered a speech as UNESCO-Laureate, at UNESCO-Paris, on Nov. 04<sup>th</sup>. 2015.
172. Chief Guest in International Nanomedicines Symposium on "Nanotheranostics: A New Concept in Imaging and Drug Delivery" *Thursday, 26<sup>th</sup> November, 2015, NORI, Islamabad, delivered key Note speech.*
173. Participated in "14th National & 5th International Conference of Botany, January 15-18, 2016, University of Karachi, chaired session.

174. Chief Organizer “AASSA Regional Workshop on “Challenges in Water Security to Meet the Growing Food Requirement” Islamabad, PAKISTAN. 19-21 January, 2016. Organized Jointly by: Association of Academies and Societies of Sciences in Asia (AASSA) and Pakistan Academy of Sciences (PAS). Supported by: The InterAcademy Partnership (IAP). Six countries participated.
175. Participated in National Conference on “Integrating SDGs and Climate Change for Resilient Pakistan, 12<sup>th</sup> Feb. 2016, organized by Int. fed. Of Red Cross and Red Crescent Societies & Lead-Pakistan.
176. Organized a workshop on Past Present & Future of Science: Making Pakistan Science Conscious: February 17, 2016, at PAS-Islamabad.
177. Key Note speaker in Workshop On Off-grid Energy for Rural Development, Hermanus, South Africa 28 Feb.-2<sup>nd</sup> March 2016.
178. Participated in a joint workshop of US-National Science Academy on One Health: One Globe, presented ideas on Conduct of Responsible Science: March 3-6, 2016.
179. Presented a talk on “Biosafety, Policies, Practices and Regional Resources: Pakistan’s Perspective” in The Middle East and South Asia Conference on Epigenetics and Genetics of Infection. March 7-8, 2016, Royal Scientific Society, Amman, Jordan.
180. Delivered key note paper entitled, “*Emerging technologies vs Conservation and Poverty*” in international conference on “Major environmental constraints in Plants: Assessments and Reclamation in Govt College Univ., Faisalabad. March 28-29, 2016.
181. Organised a training workshops for Traditional Healers on “Traditional knowledge and Modern Science”, at PAS April 7<sup>th</sup>, 2016.
182. Presented a paper on “*UNSCR 1540 implementation in the academic sector in the biological fields: Pakistan’s Experience*” in COMPREHENSIVE REVIEW 2016: UNSCR 1540 CIVIL SOCIETY FORUM A DIALOGUE WITH ACADEMIA AND CIVIL SOCIETY. HOSTED BY THE UNITED NATIONS UNIVERSITY 11-12 April 2016 at UN Headquarters, New York.
183. Lecture on emerging trends in life Sciences, PAS workshop in University of Baluchistan. April 20<sup>th</sup>, 2016.
184. Chief organizer regional workshop on BIOSAFETY AND BIOSECURITY IN LIFESCIENCE RESEARCH’ 26 - 28 April 2016, PAS, Islamabad, Pakistan. Presented Two articles.
185. Presented Two papers entitled, “*Challenges and Opportunities of advances in Biotechnology for Infectious Disease Research in Pakistan*” and “*Subcontinent Youth as a guardian of trust to support Safety, Security and productivity of Research*” in Indo-U.S. Workshop on Building Regional Capacity to Tackle Challenges of Emerging Infections and Global Health Safety! In Seychelle May 8-12, 2016.
186. Presented a paper entitled, “*Higher Education: a tool for peace & Prosperity*” as a seminar in Hamdard University, Karachi. May 18, 2016.
187. Presented an article on “Herbal medicine as an example of University-Industry interaction to serve humanity” in a Conf. at GCU., Faisalabad. May 19, 2016.
188. Presented a policy paper entitled, “Practising Ethics in Science in Developing Countries: Lessons from Pakistan” in Ministry of Science, Technology and Research in Tehran to the think tank of Iran on May 23, 2016.
189. Presented a talk in Shiraz University, Iran entitled, “ETHICS IN ERA OF SCIENCE & TECH. INNOVATION” May 26, 2016.
190. Key note in Tehran university “BIOETHICS IN 21<sup>ST</sup> CENTURY”, May 27<sup>th</sup>, 2016.
191. Advisor, 16<sup>th</sup> Conference of the Science Council of Asia on Science for the People: Mobilizing Modern Technologies for Sustainable Development in Asia. May 31-June 1, 2016. Colombo, Sri Lanka. Organized by: SCA; Sci. Council Japan; Nat. Sci. Found.

192. Chaired session with concluding presentation “National Workshop on Organic Food and Health: Avenues of Innovation and Entrepreneurship. 2-6-2016, PCST-Islamabad.
193. Participated in “Open consultations by the security council committee established pursuant to resolution 1540 (2004) on the comprehensive review of the status of implementation of resolution 1540 (2004) with member states” Presented my work, “UNSCR 1540 implementation in the academic sector main challenges: Pakistan’s Experience” at UN HQ, New York, 20-22 June, 2016.
194. Delivered a talk on “Biosciences and Technology for National Security” in a Seminar on “Role of Education, Science & Technology in National Security” organised by The Institute of Strategic Studies, Islamabad (ISSI) on July 28, 2016.
195. Presented a talk on “Understanding of BWC by Academia in developing countries” in UN-BWC side event at Geneva, Aug. 8-9, 2016
196. Presented a special paper on “Balancing publication ethics and business” in International conference of Asian Council of Science Editors in Carlton Palace Hotel, Dubai. Aug. 10-11, 2016.
197. Organised One day Tibbi Seminar on Tibb, Nature and Science, presented a talk on, “National Healthcare System Challenges & Roadmap to progress” in Agriculture University, Faisalabad. Aug. 21<sup>st</sup>, 2016.
198. Participated in 9TH EXTRAORDINARY SESSION OF THE WORLD COMMISSION ON THE ETHICS OF SCIENTIFIC KNOWLEDGE AND TECHNOLOGY OF UNESCO (COMEST) UNESCO Headquarters, Paris, 12-16 September 2016. Presented views on Ethics in Water; Robotics, Refugees and Big Data.
199. Organised National Seminar on “South-South Cooperation in the Framework of Sustainable Development Goals” on September 22, 2016. Presented paper on “FROM MDG to SDG& south south cooperation needed for its success”.
200. Organised A Joint Pakistan-U.S. Workshop on Strengthening and Sustaining a Network of Public and Animal Health Clinical Laboratories in Pakistan. Sep. 27-29, 2016 at Pakistan Academy of Sciences, Islamabad.
201. Presented a talk on “Health Issues of Refugees” in AASSA International Symposium on “Refugees & Migrants: A Global Problem or an Asset” Ankara, Turkey. 20-23 Oct. 2016.
202. Participated in “International Science Forum of National Scientific Organization on the Belt and Road Initiative” Beijing, China 7-8 Nov., 2016, presented article on role of Pak. Acad. of Sci. in Policy making of government.
203. Presented an article in International workshop of Asian Science Councils Editors, “Editors Café” entitled, “From Impact Factor to Impact: Open Science, Open access and Inclusive Society” at Pak. Academy of Sciences, 21<sup>st</sup> Nov. 2016.
204. Key note speaker and presented talk entitled, “Young Researchers & Responsible Conduct of Science: Successes and failures” in conference on Bioengineering: Lessons from Recent Cases for Building. Organized by Engagement between Communities The Centre for the Study of Existential Risk (CSER) 12th to 14th December 2016 at Clare College, Cambridge University.
205. Participated in Consultative workshop on University-Industry Collaborative Interactions: Policy and Practical Implications for Pakistan, 4<sup>th</sup> Jan. 2017, Islamabad Hotel, by PCST.
206. Participated in 4<sup>th</sup> Hamdard International Conference on Unani Medicine 2017; Jan. 09, 2017. Presented a talk on “Herbal Medicine in 21<sup>st</sup> century”.

207. Participated in COMSTECH-Technology Times International Workshop on “Science Communication: Enhancing Public Understanding”. Presented a paper on Science Communication and Academia. Jan. 10-11, 2017.
208. Presented talk on “Responsible Sciences under one health” in TISSUE CULTURE COLLECTIONS WORKSHOP held from January 23-26, 2017 in Amsterdam, Netherlands. By CRDF Global
209. Participated in strategic planning meeting of PBSA under US-NIH in Dubai Hilton Gardens Hotel, MoE. Jan. 29-Feb.3<sup>rd</sup>. 2017.
210. Participated in AASSA - SCJ Workshop on “Role of Science for Inclusive Society,” by Science Council of Japan (SCJ), in Tokyo on 1-3 March, 2017. Presented a paper entitled, “From Impact Factor to Impact: Open Science , Open access and Inclusive Society”
211. Presented a talk on “*National Healthcare System Challenges & Roadmap to achieve SDGs*” in international workshop on *Sci. Community and Pakistan’s Challenges of Health and Nutrition in the context of SDGs held at Pak. Academy of Sciences organized by PAS-WHO-AKU. March 6-7, 2017.*
212. *Presented a talk on “One Health Initiatives in Pakistan” in Faisalabad Agriculture University, under US-National Academies of Sciences. March 28,17.*
213. *Organised an international workshop on “Pak-US joint workshop on One globe one health”. Pak. Academy of Sciences, March 30<sup>th</sup>, 2017.*
214. Presented a talk entitled, “Ethics: food security & biotechnology” in 3<sup>rd</sup> International Conference on 'Agriculture, Food Security, and Biotechnology', April 26-27, 2017 at NIGEB-NARC-Islamabad.
215. Presented a paper on “Responsible Sciences Under One Health” in *Fifth-ICLS-KIBGE Conference on “Responsible Conduct of Science: Ethical Concerns in Medical and Pharmaceutical Practice and Research” in University of Karachi. May 20-22, 2017.*
216. Presented a talk on “PakistanAcademy’s future plans in Scientific conduct of Pakistan” in Common Wealth Conference 2017, 12-16<sup>th</sup> June, 2017, Singapore.
217. Presented a paper on “Dual Use Education in Pakistan” in EU CBRN CoE Project 18 *International Network of Universities and Institutes for Raising Awareness on Dual-use Concerns in Biotechnology, organised by UNICRI-UN-Geneva. July 12-13, 2017.*
218. *Organised 2017 International Workshop on “CPEC Natural Hazards Risk Assessment and Mitigation” and 2<sup>nd</sup> Workshop of “Silk Road Disaster Risk Reduction” 17-18 JULY 2017, Pakistan Academy of Science.ISLAMABAD.*
219. Presented a talk on “*Global One-Health Fellowship* program: Through the lens of the *Pakistan Academy of Sciences (PAS)*” in One-health research fellowships symposium in M andarin hotel Thailand by US- National academy of Sciences, July 24-28, 2017.
220. Organized Faculty Development Workshop in collaboration of University of Utah (UU) at Pakistan Academy of Science (PAS), Islamabad.August 10-11, 2017.
221. Delivered talks on Taping indigenous herbal knowledge & Inclusive society from Bench to Bed: SWOT analyses from Pakistan and Responsible Sciences under one health in world conference on Science, Tachnology and medicine, by Asian Council of Science editors at Carlston Palace Hotel, Dubai. August 12-14, 2017.

222. Presented “NCT point of view” in PTPMA seminar on Tibbi Industry and regulatory roadmap, challenges and opportunities, at Pak. Academy of Sciences, on Aug. 26, 2017.
223. Presented talk on water ethics in Pakistani perspective in 10<sup>th</sup> Ordinary Session of the COMEST and the 24<sup>th</sup> Ordinary Session of the IBC held at UNESCO Headquarters in Paris from 11 to 15 September 2017.
224. Presented a paper on “Taping indigenous herbal knowledge & Inclusive society from Bench to Bed: SWOT analyses from Pakistan” in AASSA- NAST PHL International Symposium on “*Realizing the Full Cycle of Research and Development: From Bench to the Community*” Taal Vista Hotel, Tagaytay, Philippines. 21-23 September 2017. Jointly Organized by the: Association of Academies and Societies of Sciences in Asia (AASSA) and the National Academy of Science and Technology, Philippine.
225. Presented a talk on “ Ethical concerns and regulatory issues related to proteomic research in plant sciences” in International Conference on recent trends in proteomics. Quaid-i-Azam University, Islamabad, Oct. 2-4, 2017.
226. Delivered a lecture on Research activities of Biotech. At QAU in International ISLAMIC WORLD ACADEMY OF SCIENCES (IAS); 7-10 October 2017 Konya.
227. Delivered a lecture on Ethics and current trends in Biotech. in Dept of Biotech. NECMETTIN ERBAKAN ÜNİVERSİTESİ; 10 October 2017 Konya - Turkey
228. One of the Panelist discussion on water and environmental issues in Islamic world at Sharif university in Tehran Dec. 04, 2017.
229. Sepcial lecture in Tarbeet Mudarasa University on Role of Biotechnology and drug development. On Dec. 5<sup>th</sup> 2017.
230. Delivered key note talk on Impact Factor to Impact: Open Sciences and society in international congress on ethics in S& T on 6<sup>th</sup> Dec., 2017 at National Library, Tehran.
231. Delivered a talk on ‘Pakistan’s experience in engaging scientists in biosecurity’ in On 7 Dec., 2017 IAP hosted a side event on ‘Implementation in Action: IAP’s experience in engaging scientists in biosecurity’ in UN-Geneva.
232. Delivered a talk entitled “Anti-cancer-green bio Nano Material -present status and future prospect” in "1st international conference on drug discovery and development". Organised by AWKU, Mardan at NARC-Islamabad on 3rd January 2018).
233. Presented a talk on PAS efforts in One Health activities in “A Joint Pak-US workshop to Review PAS-NAS Clinical Lab. Handbook. BANGKOK, THAILAND. Jan. 28-30,18.
234. Participated in International planning workshop of Fogarty International-PBSA, to make plan for 2018-2020. Sheraton Hotel, Bangkok. Jan. 31<sup>st</sup>, 2018.
235. Presented a key note talk on “National and International Challenges in relation to biodiversity; environment & Frontier Technologies” and conducted a workshop on ETHICS AND RESPONSIBLE CONDUCT OF RESEARCH in International Conference on SAFE AND SECURE SCIENCE (5-9 FEBRUARY 2018) Sunway University, Kuala Lumpur.
236. Participated in Asian Council of Science Editors annual meeting. March. 19-21, 2018, Carlston Palace Hotel, Dubai. Presented a paper on Anti-cancer-green bio Nano Material - present status and future prospect.
237. Presented a paper on Taping indigenous herbal knowledge & Inclusive society from Bench to Bed: SWOT analyses from Pakistan in 7<sup>th</sup> International and 16<sup>th</sup> National conference of Pakistan Botanical society at Islamia College University Peshawar, March 24-25, 2018.

238. Presented a paper on “Challenges and opportunities of Unani Medicine in Contemporary world” in Hamrdard University, April 23-24, 2018, Chief Guest in Inauguration.
239. Attended COMEST meeting on “Ethics and Water” in Oslo-Norway, presented data in Norwegian Academy of Science and Letters. May 7-9, 2018.
240. Participated in the international workshop on *Governance of Dual Use Research in the Life Sciences* held from 11-13 June, 2018 at the Croatian Academy of Sciences and Arts in Zagreb, Croatia.
241. Presented “Efforts of PAS in One health issues of Pakistan” at PAS-US-NAS “PAKISTAN ONE-HEALTH FELLOWSHIP PLANNING SYMPOSIUM” July 8 -12, 2018, Bangkok, Thailand.
242. Gave a talk on “From Ethnobotany to Nanotechnology; its importance to BRI: A case study from Pakistan.” At 8<sup>th</sup> Asia-Pacific forum of CAS at Kunming- China. July 13-15, 2018.
243. Key Note Lecture on “Governance of Dual Use Research in Life Sciences; The Research Community safeguards and Scientific Integrity” at CEMB Training workshop on DURC on July 17, 2018.
244. Delivered a talk on “Scientist – Media Interaction and Ethics in Governance of Science and Technology” AASSA International Workshop on “*SHARE (Science, Health, Agriculture, Risk & Environment) Communication: The Importance of Media to Engage Research & Development with Public Understanding*” Jakarta, Indonesia 5-8 August 2018.
245. Delivered a talk on “From Ethnobotany to Nanotechnology; Challenges and opportunities in eastern medicines: its importance to BRI” at NCT-PAS-Poonch University workshop at Rawlakot, AJK, was chief guest in concluding session on 18<sup>th</sup> Aug. 2018.
246. Delivered key note lecture on “Herbs of KP & Knowledge Economy: BRI as Opportunity” in International conference on Conservation of Medicinal and aromatic plants & livelihood of mountaineous communities” in Swat Univ., 3-5 Sep., 2018.
247. *Participated in 10TH EXTRAORDINARY SESSION OF THE WORLD COMMISSION ON THE ETHICS OF SCIENTIFIC KNOWLEDGE AND TECHNOLOGY OF UNESCO (COMEST) UNESCO Headquarters, Paris, 10-16 Sep. 2018.* Played active role in the working group of ethics in water and ethics for land use.
248. *Presented a talk on "Herbal medicine better cure: Myth or reality". In Unani Medical college Khushab on Oct. 14<sup>th</sup>, 2018.*
249. Presented a paper on, “Alternative medicine better cure: Myth or reality, role of communication” in AASSA International Workshop on “Promoting role of scientists and media in science and health communication: From Policy to Practice” October 28<sup>th</sup> - November 1<sup>st</sup>, 2018, At Bangkok International Trade and Exhibition Center (BITEC), Bangkok, Thailand.
250. Delivered a talk on “IRREVERSIBLE LOSS COUPLED WITH FRONTIER TECHNOLOGIES: THREATS TO HUMAN HEALTH & FOOD SECURITY” in International Seminar on Crop wild relatives Resources of Pakistan. Nov. 14<sup>th</sup>, 2018, NARC-Islamabad.
251. Presented a paper entitled, “Regulatory frameworks to prevent the misuse of S & T: Pakistan’s Experience” in Regional Workshop on Science and Technology: Developments Relevant to the Biological Weapons Convention (BWC) for Asia. Seda Vertis Hotel, Philippines. 21-22 Nov. 2018.

252. Presented paper entitled, "Ethics: food security & biotechnology" in A two days' workshop on Plant Biotechnology for Food Security & Launch of ISAAA's 53rd Annual Brief 2018; Nov. 27-28, 2018 at FCCU-Lahore.
253. Gave a lecture on Journey from Basic to applied Science: MoSAEL Autobiography in 2<sup>nd</sup> International Conference of Plant Sciences, Dec. 5-7, 2018 at GCU-Lahore.
254. Presented a talk entitled, Governance of Research: The Research Community Safeguards and Scientific Integrity". In PSBMB CONFERENCE at KIBGE-Karachi. 9-12, Dec., 2018.
255. Organised "Two days National Workshop" on Need and Importance of Innovation in Tibbi Education System" 19-20<sup>th</sup> Dec., 2018 at Pak Acad. Sci., Islamabad.
256. Participated in Launch Conference for Emerging Challenges & Opportunities for Pakistan Islamabad National University, 21-22 Dec. – 2018 at Former PM House.
257. Spoke about "Policies of Higher Education & Job opportunities in Pakistan: SWOT analysis". In ROUND-TABLE TO EXPLORE CONSTRAINTS ON WORK OPPORTUNITIES FOR PHDS. Jan. 11-12, 2019
258. Guest speaker in 'Responsible Conduct of the Life Sciences' Workshop as a guest from February 4th - 8th 2019 at COMSTECH, Islamabad by PBSA- Fogarty Intern Center, USA.
259. Key note speaker lecture entitled, "Herbs & Knowledge Economy: BRI as Opportunity" at 6<sup>th</sup> Annual conference of Asian Council of Science Editors. Carlston hotel, Dubai Feb. 13-14, 2019.
260. Key note speaker entitled, "Functional Genomics Applied to Understanding Drought & Salt Tolerance and Osmoregulation in Plants, in International conference on « Water Saving and Plant Production Strategies: Constraints and Implications for Sustainable Agriculture" held during March 26-28, 2019 at Department of Botany, Government College University, Faisalabad (GCUF), Pakistan.
261. Delivered a talk on "Fundamental Guidelines for young Researchers" in Asian Conference on Sci., Tech and Medicine" in Emerging Scientists Conference by Asian Digital Library, Faisalabad March 29<sup>th</sup>, 2019.
262. Presented data on Land Tenure and Resource Ownership in COMEST meeting in Beirut, April 3-5, 2019.
263. Participated as core group member 1<sup>st</sup> ANSO (Alliance of International Science Organizations) working group meeting at Ya'ao International Hotel, Beijing. Presented ANSO progress report. 13-14<sup>th</sup> May, 2019.
264. Participated ANSO (Alliance of International Science Organizations) Strategic Plan Drafting Workshop at Ya'ao International Hotel, Beijing. Presented Chapter 3 (ANSO Action Plan 2020-2022) of strategic Plan. 15-17<sup>th</sup> May, 2019.
265. Participated in the consultative workshop on Qarshi knowledge city, Hattar-Paistan, June 24-26, 2019. Talk on Biotechnology & Higher Education: A tool for peace & Prosperity.
266. Participated in 11th (Ordinary) Session of The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST): Bangkok, Thailand, 5-6 July 2019. Presented a case studies on Land Use of Pakistan: Challenges and Issues.
267. Gave life experience in a workshop on "Interfaith harmony" by Intefaitth foundation in Baragali- Abbotabad on July 19<sup>th</sup>, 2019.

268. Gave a lecture on Modern trends in traditional unani medicine in a conference for Hakeems by Hubaaib Foundation in Islamabad on July 21<sup>st</sup>, 2019.
269. Chief organizer, AASSA-PAS REGIONAL WORKSHOP 2019 Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health. August 19-21, 2019 Islamabad – Pakistan. Presented three lectures entitled, “*Role of complementary medicine in National Health Care System: Challenges and Way forward*”; “*Bridging Traditional knowledge & Frontier Technologies for Sustainable Development in Asia*” and “*Science & Higher Education: A tool for peace & Prosperity*”.
270. Presented a talk on “Open Science and Inclusive Society” in UNESCO-Regional Multi-Stakeholder workshop on “Open Science for Networked Societies” 4<sup>th</sup> Industrial Revolution and SDGs in Asia and Pacific. 16<sup>th</sup> Sep., 2019, Jakarta Indonesia.
271. Presented a talk on “Use of Natural/Cultural Resources for Socio-Economic Dev. In UNESCO sites” in UNESCO-Science to Enable and Empower Asia Pacific (SEEAP) for SDGs. 17-18<sup>th</sup> Sep., 2019, Jakarta Indonesia.
272. Presented a paper on “Functional genomics applied to understanding drought & salt tolerance and osmoregulation in plants” in AASSA Regional Workshop on “*Crop Biotechnology for Sustainable Agriculture*”. The K-Hotel, Seoul, Korea. 23-25 Sept. 2019.
273. Delivered key note presentation on Ethics, Science and Spirituality in 2019 World Peace Conference at UNESCO-Paris Oct. 7-9, 2019.
274. Chief Guest and delivered a talk on “Role of Herbal Medicine in Knowledge economy for Sustainable Development of Pakistan” In international Seminar on Medicinal Importance of Hemp. Oct. 16<sup>th</sup>, 2019 at PMAS Arid Argi. Univ. Rawalpindi-Pakistan.
275. Co-Organised a workshop in Good Clinical Lab. Practices in GeorgeTown University, Qatar campus. Oct. 22-24, 2019.
276. Delivered a special talk at College of Life Sciences in University of Chinese academy of Sciences Huairou City-Beijing on, “IRREVERSIBLE LOSS OF BIODIVERSITY COUPLED WITH FRONTIER TECHNOLOGIES: NEXUS OF INFECTIOUS DISEASES” on Nov. 1<sup>st</sup>, 2019.
277. Delivered a talk at Institute of Tibetan Plateau Chinese Academy of Sciences and ANSO secretariat on “Leadership on the Frontline: Tribal Man Leading to international recognition” on Nov. 4<sup>th</sup>., 2019.
278. Participated in “International Conference on Frontiers of Sciences” Organised by Chinese Academy of Sciences, at University of Chinese academy of Sciences Huairou City-Beijing on Nov. 7<sup>th</sup>., 2019.
279. Key Note speech in Inaugural session of ANSO World Youth Forum. Hangzhou-China: Nov. 9, 2019
280. Presented a Talk on “From Ethno to Nano; Basic to Applied: Success story from Pakistan. In a session “How Basic Sciences support Sustainable Development in ANSO World Youth Forum. Hilton East, Hangzhou-China: Chaired Two sessions. Nov. 9-10, 2019
281. Participated and chaired session in “National Dialogue Ag. Biotech for food security and capacity building of biosafety regulators”, 11-12 Dec. 2019, COMSTECH-Islamabad.
282. Presented a talk on “Molecular Systematics in Angiosperms: Advantages and Disadvantages” in International Symposium on Plant Life of South Asia (On the successful completion of Flora of Pakistan. 24-27, Feb., 2020 at University of Karachi.



283. Participated in UNESCO organized a Virtual Ministerial Dialogue on COVID-19 and Open Science, held on 30 March 2020.
284. Attended a virtual meeting of UNESCO on Social and Human Sciences (SHS) on April 27, 2020.
285. Conducted “Series of Awareness Sessions and Training workshops on Bio-safety & Bio-security, Bio-risk management and Bio-waste disposal among Law Enforcing Agencies, Medical and Health Communities to ensure Public Health Security in relation with COVID-19” for Mardan.KP. 4<sup>th</sup> May, 2020
286. Moderated UNESCO-PAS WEBINAR ON COVID19 AND OPEN SCIENCE, May 11, 2020.
287. Delivered a talk on “Science family’s role during and after COVID -19” in UNESCO’s webinar on “Enable and Empower Asia Pacific for COVID 19 response” on May 19, 2020.
288. Presented a talk on “Scientific and Technological Networking in Facing the Coronavirus Challenges in the Islamic World” in 7 th Science and Technology Exchange Program (STEP), Iran. On 28-5-2020.
289. Participated in Webinar by United Nation Interregional Crime and Justice Research Institute, on COVID-19 AND FUTURE PANDEMICS, on July 02, 2020
290. Speaker in WHO Consultations on Dual Use Research and Dual Use Research of Concern (DUR/C) Dialogue with Academies and Councils; July 6<sup>th</sup>., 2020.
291. Presented a paper entitled “Pak Academy of Sciences's Response to COVID – 19”in AASSA webinar on National Academy’s response to covid-19. July 10, 2020 organised by Korean Academy of S & T and AASSA.
292. Presented a talk on Biodiversity; Emerging and re-emerging Diseases: Lessons learnt from novel viruses”in UNESCO-WWF Webinar on COVID-19 and its Relationship with Nature – Build Back Better. 21 July 2020
293. Presented a talk on “Networking for Scientific and Ethical Dimensions of AI in Facing the Coronavirus Challenges” in webinar entitled, Towards a Regional SETI (Science Engineering Technology Innovation) Support Mechanism for Asia and the Pacific Region Experts dialogue on SETI Priorities and Implementation Means Asia-Pacific Online Regional Consultation 1st Sep., 2020.
294. Presented a paper entitled “Integration of social science with the natural science” in webinar on Open ScienceTowards a Global Consensus” on Open Science Inputs from Asia-Pacific region to the UNESCO Recommendation on Open Science UNESCO OFFICE JAKARTA ASIA AND PACIFIC REGIONAL BUREAU FOR SCIENCES SEPTEMBER 15<sup>th</sup>, 2020.
295. Participated in COMEST (UNESCO-Paris) online meeting on ethics of Internet of things, Land use and other international current pandemics from 14<sup>th</sup> to 18<sup>th</sup> Sep. 2020.
296. Participated in webinar of International Network on Biotechnology Network Partners Virtual Meeting on 16 Sep. 2020. Review of existing and discussion on potential education and training materials relevant to COVID-19, biosafety, biosecurity and bioethics.
297. Gave online lecture in a Workshop on Effective Research Methodology & Manuscript Writing in Medical Sciences organized by Islamia University Bahwalpur on Science, Ethics and Spirituality: The contribution of Avicenna, Sep. 21, 2020

298. Presentation at Arid Agri University, highlighting Herbal Medicine and knowledge economy: BRI as opportunity (Nov. 12, 2020)
299. Presented a paper entitled “Islamic Countries: Open Science; Inclusive Society and Ethics” in virtual 22ND Conference of the Islamic World Academy Of Sciences (IAS) on “Landscape of Science, Technology and Innovation in Islamic countries Under The Patronage Of His Royal Highness Prince El-Hassan Bin Talal Founding Patron Of The Islamic World Academy Of Sciences (IAS) Dec. 01, 2020.
300. Participated in IAP-International Biosecurity working group; spoke on “Anti-social social media: Infodemic in pandemics”. Dec. 2, 2020.
301. Gave presentation entitled, “Belt and Road Initiative: Impact on Science with and for Society” Organised by Xinjiang Institute of Ecology & Geography (CAS). Dec., 4, 2020.
302. Co-Organised virtual conference on “Awareness on the psychological consequences and mental health in pandemics; A case of COVID-19 infodemic” jointly by UNESCO Jakarta, Indonesia. and Quaid-i-Azam University Islamabad, on December 31, 2020; presented a paper entitled, “Corona virus, Pandemics and Ethics”.
303. Participated in international "Online meeting on Phytomedicine and Phytochemistry". Organised by Phytomedicine, United Scientific Group Texas USA. Feb. 1-2, 2021.
304. Participated in Virtual Round Table on Lessons and Opportunities for COVID-19 Research and Development in February 4, 2021 at the Pakistan Academy of Sciences, Islamabad.
305. Conference chair of EMERGING SCIENTIST (ES2021) organised by Asian Council of Science Editors (ACSE), presented key note paper on “Research Career in Pakistan: Landscape & Horizons” February 13-14, 2021.
306. Participated in UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), 11th Extraordinary Session of COMEST, took place online from 22 to 26 February 2021. Presented case studies of Pakistan, Land Tenure and Resource Ownership.
307. Participated in online meeting of IWG on Biosecurity, presented Pakistan’s efforts in awareness raising on dual use of education March 02, 2021.
308. Participated in WHO Consultative Meeting on a Global Framework Guidance to Harness the Responsible use of Life Sciences, March 11, 2021.
309. Participated in virtual WORKSHOP ON MODALITIES OF A SCIENTIFIC ADVISORY PROCESS for the Biological Weapons Convention (BWC), organized by the Federation of American Scientists, in cooperation with the InterAcademy Partnership and the National Academy of Sciences. 18 and 25 Mar. 2021.
310. Participated and gave a keynote talk on “Synthetic Biology: The whole new world” in Conference on Recent advances in applied Biosciences (CRAABS) 30th March, 2021, Organised by Garrison University, Lahore.

311. Presented a talk on “Activities on open Science PAS, AASSA & UNESCO” in International webinar on “Regional Patterns of Digital Scholarly Communication and Publication” organized by The Indonesian Academy of Sciences (API) in collaboration with the Association of Academies and Societies of Sciences in Asia (AASSA) and the Inter-Academy Partnership, 31st March, 2021.
312. Presented key note address entitled, “Biodiversity Loss, Emerging Infectious Diseases Frontier Technologies and Impact” in Under the Patronage of His Royal Highness Prince El-Hassan bin Talal Founding Patron of the Islamic World Academy of Sciences (IAS) Organized by: Islamic World Academy of Sciences (IAS) and Organization of Islamic Cooperation (OIC) Ministerial Standing Committee on Scientific and Technological Cooperation (COMSTECH) 1 April 2021.
313. Organised International AASSA-PAS Webinar Series on Pandemic Preparedness: Science and Countermeasures; Webinar I: SDGs and Pandemics. Presented a talk. At Pak. Acad. Sci. Islamabad; Pakistan. April 27, 2021 (Tuesday)
314. Moderated AASSA – API International Webinar on DIGITAL SCHOLARLY COMMUNICATION. Jakarta, 28 April 2021.
315. Organised International AASSA-PAS Webinar Series on Pandemic Preparedness: Science and Countermeasures; Webinar II: Pandemics Preparedness, One Health: Lessons Learnt. Presented a talk. At Pak. Acad. Sci. Islamabad; Pakistan. May 04, 2021.
316. Presented a talk on “COVID-19: Higher Education challenges and responses” in webinar organised by AJK university on “Covid-19 and Universities”. May 05, 2021.
317. Organised International AASSA-PAS Webinar Series on Pandemic Preparedness: Science and Countermeasures; Hybrid Webinar III: How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics. Presented a talk on Utilitarianism Ethics and COVID-19: resource allocation and priority-setting. At Pak. Acad. Sci. Islamabad; Pakistan. May 25, 2021.
318. Delivered a talk on *Ethics: Ensuring Food Security in the era of pandemics, in a webinar organised by Poonch University, Rawlakot, AJK on Food security in pandemics. May 25<sup>th</sup>, 2021.*
319. Delivered a talk on *Food Security and climate change, in a webinar organised by Govt. college of women university, Faisalaabad on INTERNATIONAL ONLINE CONFERENCE ON “DYNAMIC STRATEGIES IN PLANT SCIENCES FOR CROP SUSTAINABILITY AND FOOD SECURITY”*, May 26, 2021.
320. Key note speaker in PBSA/FIC Virtual Biosafety and Biosecurity Conference June 4-5, 2021. Spoke on “COVID-19 pandemic: Bio-safety & Bio-security and Ethics”.
321. Key note presentation entitled, “BIODIVERSITY LOSS, EMERGING INFECTIOUS DISEASES FRONTIER TECHNOLOGIES AND IMPACT” in Fourth International Conference on Biosciences (ICBS-2021), Organized by Biological Society of Pakistan in Collaboration with Department of Plant Sciences, Quaid-i-Azam University, Pakistan Tuesday, June 15th, 2021, at Pakistan Academy of Sciences.
322. Organised AASSA-PAS Webinar Series 2021 Pandemic Preparedness: Science and Countermeasures: WEBINAR IV/HYBRID WORKSHOP, “COVID-19 And Higher Education: Addressing Food Insecurity through Policy Support and Research” June 24, 2021.

323. Participated in the Second Workshop on the Modalities of a BWC Scientific Advisory Process: Day 2. Hosted by Federation of American Scientists. Wednesday, Jul 7 2021. (Virtual).
324. Presented a talk entitled "Abiotic Stresses: Scenario and Strategies" in international Webinar on "Plants, Abiotic Stresses and Economy: Scenario and Strategies Worldwide" (14-15 July, 2021). Organised by GCU-Faisalabad.
325. Co-Organised International annual conference 2021 of "Asian Council of Science Editors" on Pandemic Driven Scholarly Publishing: Ways to Ensure Future Resilience and Sustainability, moderated and presented a talk on "Pandemic Preparedness: Scholarly Communications and Countermeasures". Aug. 21, 2021.
326. Delivered a talk on "COMPLIMENTARY MEDICINE AS AN ANSWER TO CHALLENGES FACED IN ACHIEVING Sdgs IN HEALTH AND POVERTY ALLEVIATION" in Swat University (Aug. 24, 2021).
327. Webinar on "What, Why, and How does identity in Peer Review Matter?" by Asian Council of Science Editors, spoke about "Ethics for Peer Reviewers", Dubai Sep. 19, 2021.
328. Participated in UNESCO-COMEST meetings on ethics of geo-engineering and The value of Science. Oct. 1<sup>st</sup>, 2021.
329. Conducted an online training workshop for UNESCO "RESEARCH ETHICS STANDARDS: Refashioning Scientific Dialogue", Oct. 11-14, 2021.
330. Participated in Intern. WHO-meeting on Dual Use Research Concern, Oct. 14, 2021.
331. Presented reports and activities of Pak. Acad. Sci. in AASSA Board & GB 15-X-2021.
332. Participated in Biosecurity Working group of Inter-Academy Partnership on use of AI in Biosecurity; Oct. 19, 2021.
333. Participated in Intern. WHO-meeting on Dual Use Research Concern, Oct. 28, 2021; had discussed the difference between basic and applied science and its dual use.
334. Moderated and spoke in UNESCO webinar for Asia Pacific region on world Philosophy day entitled, "Science, Indigenous Knowledge, and the Pandemic". Nov. 18<sup>th</sup>, 2021.
335. Presented a key note lecture, "Synthetic and Quantitative Biology: The whole new world" in International Conference on Applied Zoology-2021 ICAZ- 2021 24<sup>th</sup> -25<sup>th</sup> November, 2021 Organized By The Applied Zoological Society of Pakistan & Quaid-i-Azam University, Islamabad, Pakistan.
336. Participated in UNESCO 12<sup>th</sup> Ordinary Session of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), from 29 November to 3<sup>rd</sup> December 2021. Presented concept note on ethics and Value of Science and Society.
337. Participated in Islamic World Academy of Sciences GB meeting on 30<sup>th</sup> Dec. 2022.
338. Conducted an international workshop on Biological Safety and Risk Management at International Center for Chemical and Biological Sciences, 6-7 Jan., 2022.
339. Presented views on "Role of Open Science in Medicine (OSM) for eradicating communicable and non-communicable diseases" in a seminar at Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU) Pakistan. Jan. 18, 2022.
340. Presented views in 1<sup>st</sup> ANSO (China) -APN (Japan) Scoping Workshop, on possibilities to build capacity of young researchers in One Health, open including citizen science in addition to Climate change; Food and water security; Pollution (air/land/water) and public health; Biodiversity and ecosystem services, Jan. 27, 2022.
341. Participated in Biosecurity Working group meeting of Inter-Academy Partnership presented views on use of AI in One Health; Feb. 07, 2022.
342. Organizer and Chair of International Conference of Emerging Scientist-Season III, of Asian Council of Science Editors (ACSE). Dubai Feb. 20, 2022.

343. Key Note speaker in ISLAMIC WORLD ACADEMY OF SCIENCES (IAS) & PAKISTAN ACADEMY OF SCIENCES (PAS), WEBINARS ON Ethics: Ensuring Food Security in the Era of Climate Change. Amman-Jordan. 26 February 2022
344. Key note presentation on “Future of Higher Education in Pakistan: Vision 2032”, by Khyber Pakhtunkhwa Education Foundation Peshawar March 9-10, 2022.
345. Organised an International conference for COMSTECH-UNESCO on Open Science, presented a paper on “Ethics: Open Science and Inclusive Society” (10-03-2022)
346. Presented data on equity of gender issues in Open Science in “Open Science and the UNESCO Recommendation”, organized by UNESCO-Germany (10-03-2022)
347. Presented key note address on “Drug Discovery; Interdisciplinarity: Synthetic Biology as an example”, in second International conference on Drug discovery by AWK University, Mardan 14-3-2022.
348. Presented a key note paper on “Future of Higher Education in Pakistan: Achieving the targets of SDGs through academia” in International Conference on SDGs, at Lahore College for Women University. March 29-31, 2022.
349. Co-organised international workshop on “THE ETHICS OF SCIENCE IN SOCIETY – LESSONS FROM THE COVID-19 PANDEMIC” May 30, 2022: DesignLab, University of Twente, Netherland and presented key note address entitled, “The Ethics of Science in Society – Lessons from the Pandemic.”
350. Attended UNESCO-COMEST meeting on Value of Science in University of Twente, Netherland, May 31<sup>st</sup>, 2022.
351. Chief organizer of International workshop on World Environment Day (June 05, 2022) at Pakistan Academy of Sciences, Islamabad. Presented a paper on “ Biodiversity's role in One Health: Prevent the next pandemic?”.
352. Presented a paper entitled, “Drought tolerance to overcome toxicity and ensuring food safety of rice” in Conference & Training Workshop on Food Safety & Quality of Rice Current Scenario, Challenges and Prospects for improvement. June, 14<sup>th</sup>, 2022 organised by PARC and Mohammad Ali Jinnah University, Karachi.
353. Participated in *Higher Education Commission (HEC) Digital Library (DL) and Emerald Publishing* online training session on Emerald Publishing Awareness Challenge 2022. 30<sup>th</sup> June 2022.
354. Presented a talk entitled, “ Unani medicine Education in Pakistan and nomenclature of diplomas and degrees” in National Consultative workshop by National Council for Tibb in Lahore, 16<sup>th</sup> Aug. 2022.
355. Organiser, panelist and moderator in 8<sup>th</sup> Annual Meeting of Asian Council of Science Editors, Dubai, Aug. 21, 2022.
356. COMEST Meeting in UNESCO-Paris (18-24 Sep. 2022) on Climate Engineering and Ethics in Science.
357. Key note speaker on “Drug Discovery; Interdisciplinarity: Synthetic Biology as an example”, in INTERNATIONAL CONFERENCE ON "REVAMPED SCIENTIFIC OUTLOOK OF 21ST CENTURY", Rawalpindi Women University, on 12<sup>th</sup> October, 2022.
358. Participated in The 23<sup>rd</sup> Conference of the Islamic World Academy of Sciences (IAS) on SCIENCE, TECHNOLOGY AND INNOVATION UNDER EVER CHANGING GLOBAL EVENTS 18 - 19 October 2022 Rabat – Morocco, got elected as Vice President (IAS).
359. Panelist in celebration of World Science Day for Peace and Development 2022 by ECO Science Foundation (ECOSF), UNESCO, COMSTECH, Pakistan Science Foundation (PSF), Pakistan Academy of Sciences, and COMSATS, spoke about Basic Sciences for Sustainable Development, on November 16<sup>th</sup>, 2022.

360. WORLD PHILOSOPHY DAY 2022: THE HUMAN OF THE FUTURE Side event: Round Table presented talk entitled “Will Technology Outdate Humankind?” Wednesday 16 November 2022, UNESCO-Paris.
361. Chief Organiser of ANSO-PAS-MAAP International Conference on "Epidemic and Pandemic Preparedness". Dec. 5-7, 2022. Presented key note lecture on “Improving Pandemic Preparedness: Way Forward”.
362. Key note speaker Quaid-i-Azam University-ANSO workshop on Biosafety and biorisk management (23 Dec. 2022) <https://youtu.be/g0oI6rbxoGs>
363. Presented key note address on “Science Communication, infodemics and Academia”, in International Workshop on Science Journalism at Forman Christian College University Lahore. 11-12 Jan. 2023.
364. Participated in international workshop on “Biorisk and Technology” organized by The Stockholm International Peace Research Institute (SIPRI) at Solna, Sweden from 17-18 January 2023.

### **Member, National/International Scientific Bodies**

1. Got elected Fellow of “The World Academy of Sciences” (TWAS) 2022
2. Co-Chair (Ethics) International Society of Ethnobiology (2022-2024).
3. Member Search Committee to appoint Chairman & Members Provincial Public Service Commission, KP 2018-2021; 2021-to date (Second tenure).
4. Member Special Committee of AASSA on the ‘SHARE (Science, Health, Agriculture, Risk, and Environment Communication) 2022-2025.
5. Member Evaluation Enlistment Committee DRAP (2018-)
6. Member **IUCN Species Survival Commission**, Medicinal Plant Specialist Group **2021-2025**
7. Member Search Committee to appoint Vice Chancellor (MUST-AJK 2018-2020)
8. Member IAP- Biosecurity Working Group (BWG) 2012-todate
9. Member Senate Swat University, Khyber Pakhtoonkhwa, 2013-2016
10. President South Asian Federation of Japanese Universities Alumni Associations (SAFJUAA)
11. Member Board of Governors World Wide Fund for Nature-Pakistan (WWF-P)
12. President Pakistan Botanical Society (2011-12)
13. Member National Task Force US-Pak Bio-Engagement Programme
14. Chairperson task force sub-committee of GoP on Non Allopathic Medicine
15. Member of the Governing Council of the AQ Khan Institute of Biotechnology and Genetic Engineering (KIBGE), Univ. of Karachi as an Eminent Scientist (2007-todate)
16. Member Selection Board (KIBGE) Karachi University (2007-todate)
17. Member Pakistan Council of Science & Technology (2006)
18. Member Advisory & Selection Board Dept. Of Science & Tech. Govt. of KP (2005-07).
19. Chairperson of accreditation committees of HEC in recognizing Degree Awarding institutes and new Universities (e.g. Preston-Peshawar & Dubai; National University of Health sciences; Garrison University-Lahore; Superior University Lahore; Riphah International University; Bacha Khan University; FAST-Faisalabad; Gambat Medical College Sindh; Women University Bagh-AJK; Rawalkot University AJK; Capital University of S & T; SINDH MADARASTUL ISLAM UNIVERSITY, KARACHI; SZABIST-Dubai; University of Lahore; CAMB-Lahore; University of East, Hyderabad).
20. Chairperson of Quality Assurance Committee of PhD and M. Phil of HEC.
21. Convener HEC Biotechnology curriculum development for B.S., M.S. & M.Phil of Universities 2021-2013.
22. Focal person of Life Sciences of HEC R & D Projects both National & International

23. International Organization of Plant Biosystematists
24. International Society of Ethnobiology
25. Pakistan Botanical Society
26. Himalayan Society of Botanists
27. Japanese Society of Plant Taxonomists
28. Society for Conservation and Protection of Environment
29. Society of Molecular Biologists (Japan)
30. Society of Plant Physiologists (Japan)
31. Society for Conservation of Himalayan Medicinal Plants (SCHDMR-Japan)
32. Founder General Secretary/Treasurer of Pakistan Ethnobotanical Society
33. Member Advisory Board, Ethnobotanical Society Of Nepal.
34. Member Project Management Committee of National STEM carrier Talent Hunt scheme.
35. Member steering committee Centre of Higher Edn. Transformation, DFID funded Project.
36. Member Universities of NWFP recruitment Policy (2005-6)
37. Society for Conservation Biology
38. Member steering committee Science Advisory Board, Arlington, VA 22201 United States <http://www.scienceboard.net/>
39. Member Selection Board Fed. Urdu Univ. of Arts, Science & Technology (2008 to 2014)
40. Member of the Governing Council of the Institute of Sustainable Halophytes Utilization (ISHU), University of Karachi as an Eminent Scientist (2009-2011)
41. Member Selection Board (ISHU) Karachi University (2009-2011)
42. Member of HEC review committee for Assessing effectiveness of the Cabinet Criteria/Guidelines for the establishment of a new University/ Institution of Higher Education (2010)
43. President MEXT Alumni Association of Pakistan (1994-96, 2009 to date)
44. Nominated by Government of Pakistan for membership of “World Commission on the Ethics of Scientific Knowledge and Technology” (COMEST) of UNESCO on 6-1-2010.
45. Member Organizational Review committee of PCST to review S & T organizations (2010)
46. Member Pakistan Universities Coordinating Council 2010-2011 (HEC)
47. Member Quaid-i-Azam University’s Think Tank (2010 to date)
48. Member Syndicate NWFP Agricultural University, Peshawar (2010-2013).
49. Member Board of Studies, NIBGE, Faisalabad (2010-2013).
50. Member International Biotechnology Advisory Committee, ISESCO (2012-2015)
51. Convener National Curriculum Review Committee in Biotechnology (2013-16)
52. Member Senate Shaheed Benazir Bhutto University, Sheringal-Upper Dir, KP (2014-16)
53. Elected Member Steering committee Eastern Mediterranean Health Genomics and Biotechnology Network (EMHGBN) (2014-2018).
54. Member Board of Studies of Biotechnology of Fatima Jinnah Women University, Rawalpindi Oct. 2014 to
55. Member SciTech Media Consultative Council – STMC2 Tech. Times Media Group 2014
56. Member Dept. Tenure Review Com. (Univ of Malakand; AWKU-Mardan, Agri. Univ. Faisalabad; Environ Sci dept- Pl. Sci dept., Pharmacy Dept. QAU 2014-16)
57. Focal person in Life Sciences to Prepare a new OIC Plan of Action (2016)
58. Chapter Head Pakistan Biological Safety Association (PBSA) Federal (Islamabad) 2014-2016.
59. Member World Commission on Protected Areas for the Quadrennial Period 2013-2016
60. Secretary General, Pakistan Academy of Sciences, 2015-2017
61. Member Tenure Track Review committee of HEC Jan. 2015-Dec. 2017.
62. Member of the National Council of the Tibb, Ministry of National Health Services, Regulations and Coordination, Islamabad.

63. Member, Cabinte Civil Award Committee. 2015-2017
64. Head, Panel of Review of Degree Awarding Institutes of Pakistan (2015-).
65. Member, Technical Advisory Committee of Punjab Helathcare commission.
66. Member, Board of Governor, Nur International University (2016-2019).
67. **Member UNESCO** World Commission on the Ethics of Scientific knowledge and Technology (COMEST) 2016-2020; 2020-2023
68. Focal Person & Special advisor of Alliance of International Science Organizations (ANSO-HO, China), 2016-2022.
- 69.**Member of the Board of Authority (2019-2022), under Islamabad Healthcare Regulation Act, 2018.
70. Member of working group on “UNESCO’s Science to Enable and Empower Asia Pacific for COVID 19 response Open Science” 2020-.....
71. Member selection board, Univ. of Karachi as an Eminent Scientist (2020-todate)
72. Member of the evaluation team for The Indonesian Academy of Sciences (AIPI) and the Indonesian Science Fund (DIPI) as THE ONLINE PEER REVIEWER (2020) for the evaluation of proposals of the International Collaboration of Innovative Productive Research (RISPRO-KI) Scheme managed by DIPI, in the areas of health / life science, advance material / nanotechnology, and marine science and technology.
73. Association of Academies and Societies of Sciences in Asia (AASSA) nominee as member of the IAP Nominations and Elections Committee 2021-2022.
- 74.** Got elected for fourth time (2021-2024) as President of **MONBUKAGAKUSHO: MEXT ALUMNI ASSOCIATION OF PAKISTAN (MAAP). MAAP IS AN ALUMNI OF JAPANESE GRADUATES.**

#### **International Languages:**

- English:** Speak, read and write fluently  
**Japanese:** Speak (fluently), read and write moderately  
**German:** Speak, read and write moderately

#### **Panel of Referees/Editor of International Journals**

1. **Editor-in-Chief"** (2022-23) **"Trends in Scholarly Publishing":**  
<https://tsp.scione.com/cms/eboard.php>
2. Editor Pakistan Journal of Botany
3. Editor Proceedings of Pakistan Academy of Sciences
4. Editor Pakistan Journal of Agricultural Research
5. Pakistan Journal of Science, Technology, and Development
6. Higher Education Commission, PTCL Research Proposal Evaluation.
7. Journal of Medicinal Plant Research
8. Journal of Ethnopharmacology
9. Co-Editor-In-Chief of AJER Asian Journal of Emerging Research (ISSN 2663-4988) 2019 to date
10. **Member** Editorial Board of *Evidence-Based Complementary and Alternative Medicine*. [Hindawi.com](http://Hindawi.com)
11. Editorial Board Member OF Pakistan Journal of Agricultural Research (PJAR) 2021-2022



## Patents:

- 1) Synthesis of zinc oxide nanorods using *Momordica charantia* plant extracts. Patent Application No. 61/2019 dated 1-2-19. IPO-Pakistan. 2020.
- 2) Shinwari, Z.K., S. Rehman, M. Ali, A.T.Khalil, and L. Rahman 140/2021 Nano-cream containing silver nanoparticles from endophytic bacteria *Stenotrophomonas maltophilia* dated 17-02-2021.

**SEQUENCE DATA OF GENES REPORTED FOR THE FIRST TIME:** 355 genes

## PUBLICATIONS

<b>Book Published (International Publishers)/Policy documents:</b>	<b>08</b>
<b>International Proceedings Published:</b>	<b>13</b>
<b>Chapter Published by International Publishers</b>	<b>08</b>
<b>Articles published in international journals/ impact factor:</b>	<b>387</b>
<b>Articles published in national journals:</b>	<b>55</b>
<b>Graduation Thesis &amp; Reports:</b>	<b>07</b>
<b>Newspaper article:</b>	<b>05</b>
<b>Urdu Booklet &amp; Documentary Film Produced</b>	<b>1 + 1</b>
<b>Science &amp; Diplomacy TV talk shows and Youtube educational channel:</b>	<b>53</b>

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Total:	<b>538</b>
Citation (Google Scholar):	<b>&gt;18001</b>
<b>Impact Factor</b>	<b>&gt;606</b>
<b>h-index</b> 68	<b>i10-index</b> 287

## PUBLISHED BOOK/Policy Documents (Main/Single Author; International Publishers)

1. Shinwari, ZK & Ayaz, A. 2002. Plant wealth of Ayubia National Park and Indigenous knowledge (Urdu). WWF-Pakistan.
2. Shinwari, ZK; Khan, AA and Nakaike, T. 2003. Medicinal and other useful plants of district Swat-Pakistan. Pp 187 WWF-Pakistan. **ISBN: 969-8283-21-8**
3. Shinwari, ZK; Nasim, A and Rahman, A. 2003. Biotechnology: Opportunities and Challenges in OIC member state countries (An Overview). Pp 121 COMSTECH-Islamabad-Pakistan. **ISBN: 969-487-017-8**
4. Shinwari, Z. K., M. Rehman, T. Watanabe, and Y. Yoshikawa. 2006. Medicinal and Aromatic Plants of Pakistan (A Pictorial Guide). Pp. 492 Kohat University of Science and Technology, Kohat, Pakistan. **ISBN: 969-8870-00**
5. Gilani S.A., Z. K. Shinwari and K. N. Watanabe 2007 Monograph on *Rhazya stricta*. Mimatsu Corporation Tokyo, Japan. **ISBN: 978-4-903242-21-7**
6. Shinwari, ZK; Nasim, A and Qarshi, I. A. 2010. Biotechnology in Developing Countries: Opportunities and Challenges. Qarshi University, Lahore-Pakistan. **ISBN: 978-969-9224-01-0**
7. Shinwari, ZK; G. M. Mancini and W.J. Pinard 2011 An Introduction to Biorisk Management and Dual Use in Life Sciences. Landau Network Centro-Volta, Italy pp.144.

8. Shinwari, ZK 2015 Dual Use Education Concerns in Biotechnology: Pakistani Perspective. IAP-PAS-EU-CBRN, LNCV-Italy. ISBN: 978-969-8223-19-9

**INTERNATIONAL PROCEEDINGS PUBLISHED** (Main Author; International Publishers):

1. Shinwari, Z.K. 1996 Proceedings First Workshop on Ethnobotany and its application to conservation Chief Editor PP227, WWF - ICIMOD- UNESCO - PARC. ISBN-969-8356-00-2
2. Shinwari, Z K. & Ashiq A. Khan (Eds.) 2001 Proceedings Workshop on Ethnobotany and its application to Participatory Forest Management. WWF-Pakistan ISBN: 969-8283-16-1
3. Shinwari, Z K., A. Hamilton & Ashiq A. Khan(Eds.) 2002 Proceedings Workshop on Curriculum Development in Applied Ethnobotany. WWF-Pakistan
4. Shinwari, Z.K. and Khan, AA 2003 Land Tenure and Resource Ownership. Proceedings: Consultative workshop on Land Tenure and Resource Ownership, Swat (Chief Organizer) (Sep. 2-4, 2002). ISBN: 969-8283-19-6
5. Hamilton, A.C., Pei Shengji, J. Kessy, Ashiq A. Khan, S. Lagos-Witte & Z.K. Shinwari 2003 The Purposes And Teaching Of Applied Ethnobotany, People And Plants Working Paper 11, March 2003
6. Sarwar, M.; Khalid, A.M.; Shinwari, Z.K.; Malik, K.A. and Nasim, A. 2004 Advance Techniques in Biotechnology. Manual for an International workshop at NIBGE-Faisalabad-Pakistan. Jan. 5-17, 2004.
7. Aumeeruddy-Thomas, Y., Shinwari, Z. K., Ayaz, A. and Khan, A.A. 2004 Fodder and
8. fuelwood: ethnobotany and management at Ayubia National Park, Pakistan. Working Paper 14
9. Shinwari, Z.K., Watanabe, T., Ali, M and Anwar, R. 2005 International Symposium
10. Medicinal Plants: Linkages Beyond National Boundaries. Sep. 7-9, 2004. pp. 283. Kohat
11. University of Science and Technology, Kohat-Pakistan. ISBN : 969-8870-01-6
12. Qaisar M and Z. K. Shinwari 2010 (Guest Editors) Pakistan Journal of Botany Special Issue (S.I. Ali Festschrift) (Vol 42, SI).
13. Shinwari, Z.K. and Showalter A. M. 2011 (Guest Editors) Pakistan Journal of Botany Special Issue (Medicinal Plants: Conservation & Sustainable Use) (Vol 43, SI).

**Chapter Published:**

1. Shinwari, Z.K. and A. Nasim 2014 Ethnobotany in Pakistan In “Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures”. pp 880-886. Springer International Publishing AG, Part of Springer Science. USA. 978-1-4020-4425-0
2. Khalil, A.T., I. Iqar, S. Bashir, M. Ali, A. H. Khalil, Z. K. Shinwari 2018 *Preemptive and Proactive strategies for Food Control and Biosecurity In Food Safety and Preservation, 240975th Edition Modern Biological Approaches to Improving Consumer Health* Editors: Alexandru Grumezescu and Alina Maria Holban. ISBN: 9780128149560. Academic Press. ELSEVIER Page Count: 696
3. Shinwari Z.K., F. Tanveer and I. Iqar 2019 Role of Microbes in Plant Health, Disease Management, and Abiotic Stress Management V. In: Vivek Kumar V; R. Prasad; M. Kumar and D. K. Choudhary (eds.), Microbiome in Plant Health and Disease, pp. 231-250 Springer Nature Singapore Pte Ltd. [https://doi.org/10.1007/978-981-13-8495-0\\_11](https://doi.org/10.1007/978-981-13-8495-0_11).

4. Iqrar I., A.Alam., M. Numan, and Z.K. Shinwari (2021). Secondary metabolites: Rapid evolving weapon in the plant-microbe warfare: (pp. 15-25). In "Plant-Microbe Dynamics Recent Advances for Sustainable Agriculture (1st Edition)" edited by T. B. Pirzadah, B. Malik, and K. R. Hakeem, pp 296: Routledge Taylor and Francis Group: CRC Press, United Kingdom
5. Novosiolova T., M. Dando, L. Shang, Z. Shinwari, A. Khalil, F. Tanveer & A. Saleemi 2021 Cartoon 4: Evaluation – for awareness raising in Dual Use Education (in Urdu)
6. Khalil, A.T., Shinwari, Z.K. (2022). Utilization of Plant Growth-Promoting Bacteria (PGPB) Against Phytopathogens. In: Sayyed, R., Singh, A., Ilyas, N. (eds) Antifungal Metabolites of Rhizobacteria for Sustainable Agriculture. Fungal Biology. Springer, Cham. [https://doi.org/10.1007/978-3-031-04805-0\\_3](https://doi.org/10.1007/978-3-031-04805-0_3)
7. Shinwari Z.K. 2022 Biotechnology and Security: Part 7. In BIOTECHNOLOGY! How can we ethically create a sustainable future using biotechnology? Smithsonian: Science for Global Goals, e Smithsonian Science Education Center USA.
8. Malik K.,M. Ahmad, Z. K. Shinwari, M. Zafar, N. Rashid and S. Sultana 2023 **Plants as Biomedicine for Skin Diseases in Pakistan.** In Book [Plants as Medicine and Aromatics](#). 1st Edition. Imprint CRC Press. Pages14. eBook ISBN9781003226925

#### **DOCUMENTARY FILM PRODUCED:**

Capacity Building in Applied Ethnobotany (A Case Study): Sustainable use of Natural Resources of Ayubia National Park. WWF-Pakistan (2002).

#### **ARTICLES PUBLISHED IN INTERNATIONAL JOURNALS/ IMPACT FACTOR**

1. Shinwari, Z.K.; R. Terauchi and S. Kawano 1994 Molecular Systematics of Liliaceae-Asparagoideae-Polygonatae. 1. RFLP analysis of cpDNA in several species of Asiatic *Disporum* species. *Plant Species Bio.* 9: 11-18.
2. Shinwari, Z.K.; R. Terauchi; F.H. Utech and S. Kawano 1994 Recognition of the New World *Disporum* Section *Prosartes* as *Prosartes* (Liliaceae) based on the sequence data of the *rbcL* gene. *Taxon* 43(3): 353-366.
3. Shinwari, Z.K.; R. Terauchi and S. Kawano 1994 Phylogenetic relationships among genera in the Liliaceae-Asparagoideae-Polygonatae sensu lato inferred from *rbcL* gene sequence data. *PI. Systematic & Evolution* 192: 263-277.
4. Shinwari, Z.K. 1995 Congruence between morphology and molecular phylogenetics in *Prosartes* (Liliaceae). *Pak. J. Bot.* 27(2): 361-369.
5. Shinwari, Z.K., Nakashima K, Miura S., Kasuga M., Seki M., Yamaguchi-Shinozaki K, and Shinozaki K 1998. An *Arabidopsis* gene family Encoding DRE Binding Protein involved in Low Temperature - Responsive Gene Expression. *Biochemical Biophysical Research Communications* 250: 161-170.
6. Shinwari, Z.K., K. Nakashima, S. Miura, M. Kasuga, K. Y.-Shinozaki, K. Shinozaki 1998 Identification of a Gene Family Encoding Dehydration-Responsive-Element (DRE) Binding Proteins in *Arabidopsis thaliana* and Analysis of its Promoter. *Plant and cell physiology.* 39: 106
7. Shinwari, Z.K 1998 Molecular Systematics of the genus *Uvularia* and related taxa based upon *rbcL* gene sequence data. *Pak. J. Bot.* 30(2): 161-172
8. Narusaka Y., Shinwari Z. K., Nakashima K., Yamaguchi-Shinozaki K., Shinozaki K. 1999 The Roles Of The Two Cis-Acting Elements, DRE and ABRE in the

- Dehydration, High Salt and Low Temperature Responsive Expression of the Rd29a Gene in *Arabidopsis thaliana*. *Plant and Cell Physiology*. 40:91
9. Nakashima, K.; Shinwari, Z. K.; Miura, S.; Sakuma, Y.; Seki, M.; Yamaguchi-Shinozaki, K.; and Shinozaki, K. 2000 Structural organization, expression and promoter activity of an *Arabidopsis* gene family encoding DRE/CRT binding proteins involved in dehydration- and high salinity-responsive gene expression. *Plant Molecular Biology* 42 (4):657-665.
  10. Shinwari, Z. K. 2000 Chloroplast DNA variation in Polygonatae (Liliaceae). *Pak. J. Bot.* 32(1): 7-14
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  12. Shinwari, Z. K. 2002 Sequence divergence of *rbcL* gene and Phylogenetic relationships in Liliales. *Pak.J.Bot.* 34(2): 191-204
  13. Gilani, S. S., M. A. Khan, , Z. K. Shinwari and Z. Yousuf 2002 Leaf Epidermal Anatomy of Selected Digiteria Species, Tribe Paniceae, Family Poaceae of Pakistan. *Pak. J. Bot.*, 34(3): 257-273
  14. Narusaka, Y.; K. Nakashima; ZK Shinwari; Y. Sakuma, T. Furihata; H. Abe; M. Narusaka; K. Shinozaki and KY Shinozaki 2003 Interaction between two cis-acting elements, ABRE and DRE, in ABA-dependent expression of *Arabidopsis rd29A* gene in response to dehydration and high salinity stresses. *The Plant Journal* 34(2): 137-149
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  16. Gilani, S. S.; M. A. Khan; Z. K. Shinwari and A. Nasim 2003 A new subspecies of *Digitaria sanguinalis* from Pakistan. *Pak. J. Bot.* 35 (3):279-282
  17. Shinwari, Z. K. & S. Gilani 2003 Sustainable harvest of medicinal plants at Bulashbar Nullah, Astore (Northern Pakistan). *J. Ethnopharmacology* 84(2003): 289-298
  18. Yousaf Z., Shinwari Z.K., Qureshi R.A., Khan, M.A. and Gilani, S.S. 2004 Can Complexity of Genus *Allium* L. Be Resolved Through Some Numerical Techniques? *Pak. J. Bot.* 36(3): 487-501.
  19. Yousaf, Z., Z.K. Shinwari and S.M. Ali 2004 Medicinally Important Flora of Dhibbia Karsal Village (Mianwali District Punjab). *Asian Journal of Plant Sciences* 3(6):757-762
  20. Masood, S., Y. Seiji, Z. K. Shinwari and R. Anwar. 2005. Mapping quantitative trait loci (QTLs) for salt tolerance in rice (*Oryza sativa*) using RFLPs. *Pak.J.Bot.*,36(4): 825 – 834.
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26. Hussain, J., Khan, AL, Rehman, N., Hamayun, M., Shah T., Nisar M., Bano T., Shinwari, Z.K. and Lee, I. 2009 Proximate and nutrient analysis of selected vegetable species: A case study of Karak region, Pakistan. *Afr. J. Biotechnol.* 8 (12): 2725-2729
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<http://www.plantphysiol.org/cgi/content/short/pp.109.147033?keytype=ref&ijkey=DrjQEiJwpQK0IQ4>
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  39. Yousaf Z., Z. K. Shinwari and M. A. Khan 2010 Phenetic Analysis of Medicinally Important Species of the Genus *Solanum* from Pakistan. *Pak. J. Bot.*, 42(3): 1827-1833
  40. Hamayun M., E-Y. Sohn, S. A. Khan, Z. K. Shinwari, A. L. Khan and I-J Lee 2010 Silicon Alleviates the Adverse Effects of Salinity and Drought Stress on Growth and Endogenous Plant Growth Hormones of Soybean (*Glycine Max* L.). *Pak. J. Bot.*, 42(3): 1713-1722

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438. Gilani, S.S., Ban, T. and Shinwari, Z.K. 2006 Reconstruction of Chromosomal Inheritance in Pedigree of Japanese Wheat Cultivars and Detection of QTL Linked to Fusarium Head Blight Resistance. J. Agri. & Biol. Sciences 1(1): 8-21 ([www.arpnjournals.com](http://www.arpnjournals.com))
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440. Shinwari, Z.K. 2006 Biotech for Indigenous Plants: Risks & Ethics. In Khan, K.M. et al. (eds.) Proceedings International Conference Biotechnology: Shaping future Agriculture (June 20-21, 2006).
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442. Jan H. U., A. Jan and Z. K. Shinwari 2012 Distribution of Weeds in Wheat Fields of District Bannu, Khyber Pakhtunkhwa Pakistan. Pak. J. Weed Sci. Res. 18(3): 393-411
443. Hussain, W., J. Hussain, S. Hussain, Z.K. Shinwari, R. Ali and A. Bashir 2013 Ethno Medicinal Study of Parachinar, Kurram Valley (FATA) KPK, Pakistan. Journal of Applied Pharmaceutical Science 3 (11): 085-088

#### **NEWSPAPER ARTICLES:**

1. Genomics and agriculture: application based research. News International, Sep 4, 2000.
2. DNA double helix discovery turns fifty. DAWN (Saturday, May 10, 2003. pp 1 & 3)
3. Biotechnology for peace and development. The News (24), Nation & Pakistan Observer, Nov. 10, 2003
4. What is the state of Science and Technology in Pakistan. DAWN: Sci-Tech World:8-9, May 05, 2004.
5. Gilani S.A, N. Anwar, S. A. Jatoy, D. Ahmed, S. Khan, Z. K. Shinwari 2006 Islam and Science. [http://blogs.nature.com/news/blog/2006/11/islam\\_and\\_science.html](http://blogs.nature.com/news/blog/2006/11/islam_and_science.html)

#### **GRADUATION THESIS/POST DOC. REPORT**

- Taxonomical studies of the common cultivated trees of Peshawar university campus. M. Sc. Thesis, University of Peshawar (1983).
- Labiatae of Northern Pakistan (A. taxonomic revision). M. Phil. Thesis, Quaid-I-Azam University, Islamabad. (1986).
- Molecular Systematics of Liliaceae-Asparagoideae- Polygonatae. Ph. D. Thesis, Kyoto University, Kyoto –Japan (1994).
- Genes induced in Environmental Stress Post Doc. Report JIRCAS, Japan (1998).
- Report on Sustainable Harvest of Medicinal Plants at Bulashbar Nullah, Astore (Northern Pakistan). WWF-Pakistan (2000).
- Report on Sustainable Harvest of Medicinal Plants at Bar and Shinaki Valleys, Gilgit (Northern Pakistan). WWF-Pakistan (2002).
- Biotechnology: Pakistan National Policy and Action Plan 2003. National Commission Biotechnology- Pakistan.

### **Research Supervision:**

#### **1a: PhD Supervised:**

S.No	Student's Name	Thesis title	Year
1	Zubaida Yousuf (Co-supervised)	Taxonomic & biochemical studies of medicinally important plants of family Solanaceae	2007
2.	Mohammad Zada	Assessment of Genetic Diversity in <i>Brassica carinata</i> Based on Morphological, Biochemical and Molecular Markers	2013
3.	Naseer Ahmed	Analysis of Bacterial Diversity in the Rhizosphere of GM and Non-GM Maize Crops and Plant Growth-Promoting Characterization of the Isolated Strains	2014
4.	Nisar Ahmed	Biological Evaluation of <i>Nepeta laevigata</i> , <i>Nepeta kurramensis</i> and <i>Rhynchosia reniformis</i>	2014
5.	Farah Naz (KIBGE)	Molecular Systematics of Tamarix (Tamaricaceae) from Pakistan	2014
6.	Ishrat Jamil (KIBGE)	Molecular Systematics of family Solanaceae from Pakistan	2015
7.	Javed Iqbal	Genetic Variability Assessment of Maize ( <i>Zea mays</i> L.) Germplasm based on Molecular Markers	2015
8.	Imran Afzal	Endophytic bacteria in some invasive species of Pakistan	2017
9.	Nadia Zehra	DNA Barcoding: A Tool for Standardization of Herbal Medicinal Products (Hmps) of Lamiaceae from Pakistan.	2017
10.	Syed Sohail Ahmed Jan	Assessment of intra-specific divergence among <i>Brassica rapa</i> germplasm based on agromorphological, biochemical and molecular markers	2017
11.	Ikram Ullah	Evaluation of biosynthesised silver nanoparticle based theranostic agent against Leishmaniasis and in-vitro cultured breast cancer cells.	2018
12.	Ali Talha Khalil	Sageretia thea (Osbeck.) mediated synthesis of multifunctional nanoparticles and their possible applications	2018
13.	Fazal Akbar	Genetic diversity and Chemodiversity Evaluation of <i>Boswellia sacra</i> Populations	2020

14.	Haris Khurshid	Evaluation of genetic structure and marker-trait association in soybean ( <i>Glycine max</i> L.) germplasm. (co-supervisor)	2021
15.	Irum Iqrar	Exploring the Biocontrol Potential of Naturally Occurring Bacteria	2021
16.	Muhammad Amir Zia	Genetic Diversity and expression Analysis of Cry1Ac Gene in Transgenic Cotton ( <i>Gossypium hirsutum</i> L.)	2021
17.	Faouzia Tanveer Reg. No. 03271413003	Biological and Metabolic Profiling of Marine Bacteria as Source of Bioactive Natural Products	2022
18.	Lubna Rahman Reg. No. 03271711002	Bioprospecting Therapeutic Potential of Endophytes from Medicinally Important Plant <i>Fagonia indica</i>	2022

1.b. PhD students currently under supervision: Four

2a: M.Phil. Supervised:

S.No	Student's Name	Thesis title	Year
1.	Shahinshah Gilani (Co-supervised)	Taxonomic studies of Genus <i>Digiteria</i>	2001
2.	Zubaida Yousuf (Co-supervised)	Studies on Genus <i>Allium</i> in Pakistan	2001
3.	Musharaf Khan Khattak (KUST)	Ethnobotany of Tehsil Karak NWFP Pakistan	2007
4.	Siraj Ahmed (KUST)	Phyto-sociological studies of graveyards ecosystem of Swat	2007
5.	Mohammad Ilyas (KUST)	Ethnobotanical studies on the vegetation of Qalagai Hills, Nekbekhail area, Lower Swat	2007
6.	<u>Samina Parveen</u>	Ethnobotany of Banda Daud Shah, Karak	2007
7.	Wahid Hussein (KUST)	Ethnobotanical studies of Kurram Agency	2007
8.	Asgar Ali (KUST)	Phyto-sociology and population density of fresh water algae of Swat	2007
9.	Samina Mohd (QAU)	Molecular Markers Assisted Genetic Characterization of <i>Caralluma</i> L. Species	2009
10.	Sidra Sultan (QAU)	Molecular And Morphological Characterization Of Selected <i>Mentha</i> Species	2009
11.	Mehreen Saeed	Molecular Characterization Of <i>Vicia</i> Species	2010
12.	Sumyra	Genetic Diversity of Chick pea blight	2010
13.	Nazia Saeed	Molecular Characterization Of <i>Lathyrus</i> Species	2010
14.	Hikmatullah Jan	Assessment of Genetic Diversity of <i>Curcuma longa</i> L. Germplasm from Pakistan using RAPD markers	2010
15.	Fazal Akbar	Assessment of Genetic Diversity of Sesame ( <i>Sesamum Indicum</i> L.) Germplasms From Pakistan	2011
16.	Cynthia Walter	Anti-Bacterial Activity in Herbal Products; Used For Throat and Chest Infection	2011

17.	Sardar Ali	Assessment of Genetic diversity in Rice breeding lines based on Morphological traits and Molecular markers	2011
18.	Kashmala Syed	Allelopathic Effect of GM and Non-GM Canola on S bean and Weeds	2011
19.	Maria Sultan	Phenotypic Divergence in Guar ( <i>Cyamopsis Tetragonoloba</i> ) Landrace Genotypes of Pakistan	2012
20.	Sarwat	Ethnobotanical Studies of Women Specific Diseases among the Local Communities of District Swat	2012
21.	Farah Gul	Ethnobotanical Studies of Herbal Remedies for Skin Diseases among the Local Communities of North West Punjab	2012
22.	M. Ibrahim	Comparative impact of GM and Non-GM Maize on Wheat crop and Associated Weeds	2012
23.	Saadia Banaris	Molecular Identification And Comparative Analysis Of Novel <i>18s Ribosomal RNA</i> Genomic Sequences Of Wide Range Of Medicinal Plants	2012
24.	Rabia Saba	Biosafety studies of genetically modified Maize ( <i>Zea mays</i> L.) on soil fertility and succeeding crop wheat ( <i>Triticum aestivum</i> L.) physiology.	2012
25.	Saira Karimi	Safety assessment of GM and non GM Canola ( <i>Brassica napus</i> ) on soil microbes and crop physiology	2012
26.	Khansa Jamil	Molecular Systematics of Selected Genera of Family Mimosaceae	2012
27.	Misbah Saleema	Biological Screening of Traditionally used Medicinal Plants Against Diarrhea in District Kohat	2013
28.	Sumera Malik	Ethnobotanical studies and biological activities of Medicinal plants from Ghazi Brotha, Attock District	2013
29.	Raees Khan	Phylogenetic Analysis of the Bacterial Community using 16s rRNA Gene Sequences of Deosai Peatland	2013
30.	Samina Bashir	Assessment of plant growth promoting activities of bacterial isolates from the rhizosphere of GM and Non GM maize crop	2013
31.	Hummaira Zafar	Molecular characterization of indigenous microbes from <i>Parthenium hysterophorus</i> and evaluation of their potential use	2013
33.	Riazullah	Analysis of Bacterial Diversity and Functional Characterization of Isolates From Peat Bog	2013

34.	Hina Rehman	Evaluation of Safflower Germplasm for Traits of Economic Significance and Biochemical markers	2013
35.	Maryum Bibi	DNA Binding studies of 1,8-Dihydroxy-4, 5 Dinitro Anthracenedion (DHDN), substituted pyridyl guanidines and their Cu(II) complexes.	2013
36.	Farees Uddin Mufti	Identification and characterization of internal control gene from selected medicinal plants	2014
37.	Irum Iqrar	Characterization of Potential Bacterial Biocontrol Agents for the Suppression of Phytopathogens	2014
38.	Faouzia Tanveer	Bioremediation of selected heavy metals by Metal Resistant Plant Associated Bacteria	2014
39.	Saad Farooque	Molecular Characterization of indigenous microbes from <i>Lantana camara</i> and evaluation of their potential use	2014
40.	Aziz ul Ikram	DNA Barcoding of selected genera of family Apiaceae using conserved gene sequences	2014
41.	Ali Talha	Molecular Systematics of selected genera of family Euphorbiaceae based on Conserved Genes Seq. data	2014
42.	Sumia Khan	Characterization of the Allergenic Components of <i>Broussonetia papyrifera</i> L. pollen	2014
43.	Madiha Tanveer	Characterization of the Allergenic Components of Hemp's ( <i>Cannabis sativa</i> L.) pollen	2014
44.	Riaz A. Khan	Phytochemical and Biological investigation of <i>Ochradenus arabicus</i>	2015
45.	Amjad Khan	Isolation, Structure Elucidation and Biological Activities of <i>Acridocarpus Orientalis</i> A. Juss.	2015
46.	Mahrukh Falah	Isolation and Characterization of Plant Growth Promoting Bacteria from Agricultural Soils of Swat, Peshawar, Kohat and D-I-Khan	2015
47.	Hina Khalid	Biological actions and cytotoxic effects of the crude extracts of <i>Tribulus terrestris</i> L.	2015
48.	Lubna Rehman	Screening the endophytes for the production of bioactive metabolites from <i>Fagonia indica</i> .	2015
49.	Abdul Wakeel	Eval. of Antioxidant, antimicrobial, antileishmanial and Cytotoxic capacity of <i>Isitis tinctoria</i> L.	2015
50.	Qaisar Khan	Molecular systematics of selected genera of family Rosaceae based on conserved genes sequence data.	2015

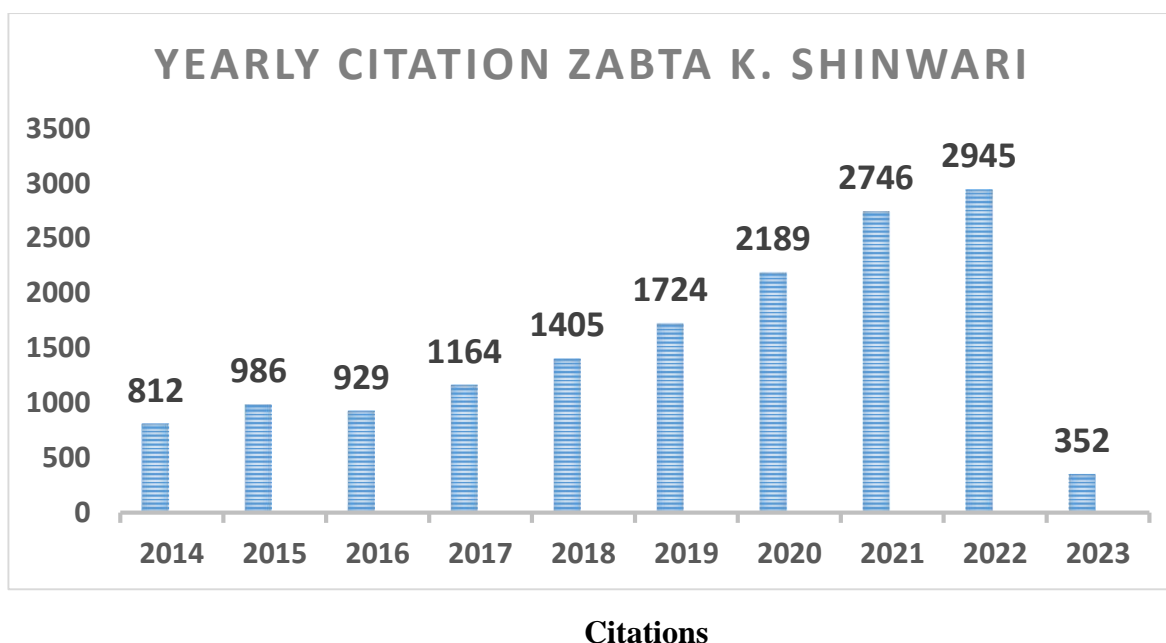
51.	Fareeza Mehtab	Assesment of PGP activities of bacteria in the presence and absence of salt stress	2016
52.	Rama Saleem	Molecular identification and biological assessment of potential anticancer <i>Fagonia</i> species in Pakistan.	2016
53.	Khaista Rehman	In vitro pharmacological evaluation of <i>Atropaacuminata</i> Royal.	2016
54.	Hina Iqbal Bangash	Cytotoxic and phytochemical activities of anti-cancerous plants <i>Viscum album</i> L. and <i>Korthalsella japonica</i> .	2016
55.	Syed Najeebullah	Molecular systematics of selected species of genus <i>Allium</i> and family Polygonaceae	2016
56.	Ibrahim Khan	Barcoding and molecular systematics of selected species of family acanthaceae	2016
57.	Ramshah Tariq	Exploring the therapeutic potential of bacteria isolated from extreme environments	2016
58.	Lutfur Rahman	Phytochemical analysis and in vitro pharmacological assessment of traditionally important medicinal plants; <i>Ajuga parviflora</i> and <i>Aconitum violaceum</i>	2016
59.	Madeeha Afzal	Pharmacological evaluation of bioactive metabolites from bacterial endophytes of medicinally important plants	2017
60.	Tanzeel Zahra	In vitro assessment of phytochemical and pharmacological potential of <i>Atriplex lasiantha</i> and <i>Chenopodium ambrosioides</i> .	2017
61.	Maryam Manan	Bioprospecting of Bacteria for plant cell wall degrading enzymes from Chromite and coal mines of Baluchistan.	2017
62.	Muhammad Ovais	Multifunctional theranostics application of biosynthesized silver and gold nanoparticles from <i>Olox nana</i>	2017
63.	Yasmin Khan	In-vitro anti-leishmanial activities of biomimetic silver nanoparticles using <i>Mentha longifolia</i>	2017
64.	Muhammad Qasim	Evaluation of in-vitro pharmacological activities of medicinal plants: <i>Ephedra intermedia</i> and <i>Seriphidium quettense</i> extracts and their green synthesized silver nanoparticles	2017
65.	Amjad Ali	Endophyte-assisted improvements in phytoremediation potentials of <i>Cucumis sativus</i> under heavy metal stress	2017

66.	Muhammad Numan	Chemical Profile and In-Vitro Pharmacological Applications of Pigments Isolated from Chromogenic Soil Bacterial Strains.	2018
67.	Aashia Alam	Therapeutic Potential of Metal-based Nanoparticles from Marine Bacteria	2018
68.	Sibgha Tayyab	Exploration of Biosynthetic Potential of Marine Actinobacteria	2018
69.	Roqayya Mumtaz	Isolation and characterization of pigment producing soil bacteria for production of bioactive compounds	2018
70.	Safia Hameed	<i>Fagonia indica</i> modulated biosynthesis of zinc oxide nanoparticles for diverse applications	2018
71.	Arif Khan	Chloroplast Genome DNA sequences of medicinally important plants and its comparative analysis.	2018
72.	Adil Khan	DNA Barcoding of Omani medicinal plants	2018
73.	Parveen Nisar	Isolation, molecular characterization and biological activities of endophytes from <i>Punica granatum</i>	2019
74.	Sidra Rahman	Synthesis of nanoparticles from endophytes of <i>Ajuga bracteosa</i> and their biological applications	2019
75.	Shakeeb Afridi	Biosynthesis of ZnO nanoparticles from <i>Incarvillea emodi</i> in different solvents for potential biomedical	2019
76.	Dania Zia	Biological synthesis of Zinc oxide nanoparticles from medicinally important plant, <i>Buxus papillosa</i> and their different biomedical activities	2019
77.	Nasir Ali	<i>Salvia moorcroftiana</i> mediated green synthesis of Zinc oxide nanoparticles and evaluation of their biomedical applications	2019
78.	Tehreen Tariq Registration 02042111004	<b>Bioprospecting of Endophytic bacteria from <i>Fagonia indica</i> and <i>Ajuga bracteosa</i> for their therapeutic potential.</b>	2023

2b. M.Phil students currently under supervision: **Six**

#### Citation indices

	All	Since 2017
Citations	18001	11387
h-index	68	55
i10-index	287	229



Updated: Feb. II, 2023 <http://scholar.google.com.pk/citations?user=J1IdVRkAAAAJ>

#### **Science & Diplomacy TV talk shows:**

- 1) Morning show on “Sustainable Use of Natural Resources to alleviate Poverty” Discussion on International workshop. Sept. 5, 2004.
- 2) My Success story on PTV National (Peshawar). April, 2006.
- 3) Pakistan’s importance for Afghanistan (Host Khushnood A Khan Nov. 2009)
- 4) Peace & prosperity of region (discussion host: Ali Mumtaz Oct. 2010)
- 5) Business & peace: Afghanistan and Pakistan (Host Tanzeela Mazhar, Sep. 2012)
- 6) Current Affairs Tonight -24th May 2013 (SADAR OBAMA KI DRONE HAMLO PAR NAYI POLICY GUIDELINE).
- 7) President of Pakistan’s visit to Afghanistan and its impact on Pak-Afghanistan relations, PTV- News line (Maryam Chaudheri- April. 8, 2014).
- 8) South Asian Politics & peace for economic prosperity. In “Seedi Baat” PTV News (1900-2000 hours, Tanzeela Mazhar). April 18, 2014.
- 9) Education Policy for KP- Part one (<http://techtv.pk/video/Dr.-Zabta-Khan>)
- 10) Knowledge economy (<http://techtv.pk/video/Dr.-Zabta-Khan-Part-2>)
- 11) Biotechnology for development (<http://techtv.pk/video/Dr.-Zabta-Khan-Part-3>)
- 12) Afghanistan Presidential elections & International obligations, PTV-News line (Maryam Chaudheri July 10, 2014).
- 13) Afghan Conference in London, PTV live @5, Dec. 04, 2014.
- 14) Death of Maulana Umar and future of talks of Taliban & International obligations, PTV-News line (Maryam Chaudheri July 31, 2015).
- 15) Policy options for Pakistan for knowledge economy using Biotechnology in program “Rabta” in Radio Pakistan. Oct. 12, 2015.
- 16) Heart of Asia “Views on Afghanistan” PTV live @5, Dec. 12-13, 2015.
- 17) Sci & Tech. health Issues in Pakistan “Rabta” on Radio Pakistan. Dec. 28, 2015.



- 18) Youth Voice, Making Pakistan Science Conscious, an interview with PTV News on Feb 19, 2016.  
([http://news.ptv.com.pk/programmevideos\\_flv\\_player.asp?name=YOUTH+VOICE++19-02-2016&vid=72&desp=Mariam+Zia&img=Youth+Voice.jpg](http://news.ptv.com.pk/programmevideos_flv_player.asp?name=YOUTH+VOICE++19-02-2016&vid=72&desp=Mariam+Zia&img=Youth+Voice.jpg))
- 19) Panel discussion on Quadrilateral Talks (Pakistan-Afghanistan-China & USA) PTV News Line with Maryam Chaudhry on May 15, 2016
- 20) PTV- 45 minutes with Naheed Chaudheri, regarding security & Science, Feb. 17, 2017. PTV's Official Web Portal
- 21) PTV- "Nuqta-e-Aitraaz" 8-9pm on Security issues. Feb. 21, 2017. <http://www.ptv.com.pk/.../userVi.../ptvNews/urduVideoDetail/2804>
- 22) PTV- "Nuqta-e-Aitraaz" with Shehzad Raza 8-9pm on current affairs. June 2, 2017.
- 23) PTV-“Chota Satooon” with 7-8pm on currunt affairs. Sep. 25, 2017. <https://youtu.be/Eaq64HXNvz8>
- 24) PTV-“Chota Satooon” with 7-8pm on currunt affairs. Nov. 07, 2017. [https://www.youtube.com/watch?v=6rZTE\\_CIXBs&list=PL2hnI7igF2KKU4i\\_ICl8OsBd5RnBJz\\_ox](https://www.youtube.com/watch?v=6rZTE_CIXBs&list=PL2hnI7igF2KKU4i_ICl8OsBd5RnBJz_ox)
- 25) PTV- "Sochna Hoga" with S. Sajjad Bukhari” 4-5pm on current affairs. April 8, 2018. <https://www.youtube.com/watch?v=p5nVbglWkds&list=PL2hnI7igF2KKIhwI9HDtskiohcbf1riI2>
- 26) PTV- "Focus Pakistan" with Babar Gorsii” 6-7pm on current affairs. April 19, 2018. [https://www.youtube.com/watch?v=hBR1G\\_Nm3mc](https://www.youtube.com/watch?v=hBR1G_Nm3mc)
- 27) PTV- "Sach to ye hei" with Shehzad Raza” 8pm live on current affairs. June 18, 2018.
- 28) PTV-“Chota Satooon” with 7-8pm on currunt affairs. Nov. 06, 2018.
- 29) PTV-“Dar Haqqeqat” with 7-8pm on currunt affairs. Nov. 09, 2018.
- 30) PTV-“Dar Haqqeqat with Imran Hasan” 7-8pm on currunt affairs. Nov. 16, 2018.
- 31) Produced videos on change Managers (youtube, May, 2020)
- 32) Herbal Medicine and Healthcare system was produced as a video in May, 2020.
- 33) Biosafety and Biosecurity and covid-19, June, 2020.
- 34) Corona and efforts of Pakistan Academy of Sciences produced by AASSA on youtube and other social media. Aug, 25<sup>th</sup> 2020.
- 35) YouTube Video released on The Future of Complimentary and/or Alternative Medicine: Opportunities for Youth and professionals, on Sep. 16<sup>th</sup>, 2020.
- 36) Biosecurity & neglected aspects of pandemics in Pakistan. <https://youtu.be/PcvA4RiF3ps> May 29, 2021
- 37) **Webinar on Pandemic Preparedness: Science and Countermeasures.** <https://www.youtube.com/watch?v=fH8tCzQhPEU&t=16s> Jun 22, 2021
- 38) **Produced video on “Dual use education, awareness levels”,** <https://www.youtube.com/watch?v=pORBquTLXNA&t=90s> July 6, 2021
- 39) Covid-19 Outcome and future directions <https://www.youtube.com/watch?v=HVC10uV53nk> Aug 8, 2021
- 40) Interview regarding life history. <https://www.youtube.com/watch?v=AJZ6GxylTiw&t=1247s> Aug 10, 2021
- 41) PTV-“Afghanistan pe Taliban ka Qabza” 10pm on currunt affairs. Aug. 15, 2021. <https://youtu.be/0wprA7PGnLw>
- 42) Biological Safety and Risk Management: <https://youtu.be/4k1XnVYAp6M> (Jan.15,2022).
- 43) BioSafety and Biosecurity: Risk Management; <https://youtu.be/aMFNMMvO0nQ> (Jan.15,2022).
- 44) Training of young researchers about institutional Biosafety committee (Jan.15,2022). <https://youtu.be/OcKMG08Xww8>.

- 45) Risk assessment. <https://youtu.be/5uqzA9xlEds> (Jan.15,2022).
- 46) Future of Higher Education in Pakistan--- Achieving the targets of SDGs through academia. (April 20, 2022) <https://youtu.be/k6JSa3GjtIY>
- 47) **Biodiversity's role in One Health: Prevent the next pandemic? (June 05, 2022).** <https://www.youtube.com/watch?v=F4V9o-FND-0>
- 48) “Drought tolerance to overcome toxicity and ensuring food safety of rice” June, 14<sup>th</sup>, 2022. <https://youtu.be/4i559lsJqv0>
- 49) Search Committees, Selection Boards: Inclusive or drama (June 24, 2022), <https://youtu.be/TrmHt6L-ICU>
- 50) Pakistan system of Herbal Medicine and its accreditation by NCT (July 1<sup>st</sup>, 2022) <https://youtu.be/wrB8LG8K-M>
- 51) Panel discussions in webinar on Open Access by Asian Council of Science Editors (ACSE). <https://youtu.be/Oj7UYu0Ak60>
- 52) Improving Pandemic Preparedness: Way Forward. (PAS-ANSO International Conference 5-7 Dec., 2022). <https://youtu.be/7ZCBI1QwCPY>
- 53) QAU workshop on Biosafety and biorisk management (23 Dec. 2022) <https://youtu.be/g0ol6rbxoGs>

### **Name and contact details of three references:**

- 1) **Allan M. Showalter, Ph.D.**, Professor and Chair;  
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