# DR. QURAT-UL-AIN

## PERSONAL DETAILS

Assistant Professor(ITS)

Department of Zoology,

GC Women University, Sialkot. Pakistan

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ainy\_choudhary@yahoo.com



# **ACADEMIC OUALIFICATIONS**

Degree	Year of passing	University	Subjects
Ph.D	2019	Quaid-i-Azam University	Animal Sciences (Reproductive Physiology)
M.Phil	2015	Quaid-i-Azam University	Animal Sciences (Reproductive Physiology)
M.Sc	2013	Quaid-i-Azam University	Zoology

## PROFESSIONAL EXPERIENCE

• Assistant Professor (TTS) (2021-till date)

Department of Zoology, Govt. College Women University, Sialkot.

• IPFP fellow (2020-2021)

Department of Zoology, Govt. College Women University, Sialkot.

• Principal Investigator (2020-2021)

SRGP Project entitled "Assessment of Therapeutic Potential of *Rumex Hastatus* Extract towards Reproductive Anomalies Induced by Triclosan Exposure Using Rat Model."

• PhD Research Scholar (2015-2019)

Thesis entitled "Comprehensive Assessment of Traditionally Used Medicinal Plants as MaleContraceptive: A Quest for Novel Herbal Contraceptives."

• Research Associate (2015-2018)

Research associate in NRPU Project entitled "Use of medicinal plants as male contraceptives; search for natural/herbal contraceptive" at Reproductive Physiology Laboratory, Quaid-i-Azam University, Islamabad.

• M.Phil Research Scholar (2013-2015)

Thesis entitled "Possible therapeutic effects of Quercetin against Bisphenol A induced testicular damage in Male Sprague Dawly Rats: A histological study."

## **RESEARCH SUPERVISION (MS)**

S.No.	Student's Name	Thesis title	Year
	Ayesha Tahir	Ameliorative Effects of Kaempferol Against Triclosan	2025
1.		Mediated Hepatorenal and Reproductive Toxicity in Male	
		Rats	
2.	Hunsa Qamar	Mitigative Potential of Kaempferol Against Triclosan	2025
		Induced Oxidative Stress and DNA Damage in Male Rats	
	Syeda Noor-Ul-Nisa	Investigation of Phthalates Induced Gonadal Toxicity in	2025
3.		Oreochromis mossambicus: An In Vitro Biochemical	
	E . A 1 1	Approach	
	Fatima Arshad	Impact of sublethal exposure of di-butyl and di-isononyl	2024
4.		phthalates on testicular histology and sperm parameters of	
	Zunaira khalid	Cyprinus carpio (Common Carp)	2024
_	Zunaira knaiid	An <i>in vitro</i> biochemical approach to study phthalates	2024
5.		induced reproductive toxicity in <i>Cyprinus carpio</i> (Common carp)	
	Amna Nawaz	Phthalates induced toxicity assessment by	2024
6.	Allilla Nawaz	histomorphometric and semen analysis in <i>Oreochromis</i>	2024
0.		mossambicus (Tilapia)	
		Determination of histological alteration in	2023
7.	Hira	reproductive organ of <i>Hypophthalmicthys molitrix</i>	2023
	11111	exposed to chlorpyrifos and bifenthrin.	
0		Assessment of reproductive toxicity in <i>Cyprinus</i>	2023
8.	Fatima Siddique	carpio induced by sub-lethal exposure of selected	
		insecticides.	
9.		Genotoxic and Biochemical changes in Reproductive	2023
<b>9.</b>	Jwaher	parameters of Hypophthalmichthys moilitrix exposed to	
		Selected Insecticides	
		Therapeutic Potential of Vitamin C and Zinc against	2022
10.	Ayesha Sadiqa	Furan Induced Reproductive Toxicity inRats	
		An In vive Dischamical Approach to Ctudy	2022
11.	Maryam Taha	An <i>In-vivo</i> Biochemical Approach to Study Therapeutic Effects of <i>Rumex hastatus</i> Against	2022
11.	Maryam Taha	Tricloson Mediated Reproductive Toxicity in Male	
		rats	
		Ameliorative Effects of <i>Rumex hastatus</i> against	2022
12.	Hira Bajwa	Triclosan Induced Oxidative Stress and Sperm DNA	2022
	III Duj wu	Damage in Adult Male Rats	
l	1	1	l

# **LIST OF PUBLICATIONS**

- 1. Sadia Maalik, Sajida Mushtaq, **Qurat Ul Ain**, Moazama Batool, Naheed Bano, and Ayesha Hafeez. 2024. "Life table Analysis and Extent of Damage Caused by Spodoptera exigua (Noctuidae: Lepidoptera), A Serious Pest." Journal of Zoo Biology. 7(1):35-41.
- 2. Meerub Sarfraz, Mamoona Mahmood, Moazama Batool, **Qurat Ul Ain,** Sadia Maalik, and Sajida Mushtaq. "Potential Benefits of Pomegranate as an Additive in Fish Diet and Fish Products: A Review." 2024. BioScientific Review. 6(4): 67-85.
- 3. Moazama Batool, Syeda Ansa Fatima, Saima Naz, Qurat Ul Ain, Sheeza Bano,

- Ghulam Abbas and Ahmad Manan Mustafa Chatha. 2024. "Behavioral and Hematological Alterations in Grass Carp (Ctenopharyngodon idella) Exposed to Bifenthrin". Sarhad Journal of Agriculture. 40(2):440-447.
- 4. Moazama Batool, Saima Naz, Ahmad Manan Mustafa Chatha, **Qurat Ul Ain**, Asma Irshad, Mamoona Mahmood, Asma Aziz, Ghulam Abbas and Fatima Yasmin. 2024. "Toxic Effects of Lead Chloride (PbCl<sub>2</sub>) on Behavioral, Hematological, and Serum Biochemical Parameters in Labeo rohita". BioScientific Review. 6 (2).
- 5. Nimra Tahir, Aadab Akhtar, Moazama Batool, **Qurat Ul Ain**. 2023. "Excessive Use of Pesticides Is a Risk Factor to Fishes: A Review on its Effects and Control Strategies." Journal of Zoology and Systematics. 1(2). <a href="https://doi.org/10.56946/jzs.v1i2.221">https://doi.org/10.56946/jzs.v1i2.221</a>.
- Moazama Batool, Rabia Khalid, Qurat Ul Ain, Sadia Maalik, Sajida Mushtaq, Mamoona Mahmood. 2023. "Evaluation of Serum Biochemical Parameters of Cirrhinus Mrigala Under Acute Exposure of Arsenic". Journal of Zoology and Systematics. 1(2). <a href="https://doi.org/10.56946/jzs.v1i2.220">https://doi.org/10.56946/jzs.v1i2.220</a>.
- 7. Muhammad Umar Ijaz, Shama Mustafa, **Qurat Ul Ain**, Ali Hamza, Shafaqat Ali. 2023. "Rhamnazin ameliorates 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin-evoked testicular toxicity by restoring biochemical, spermatogenic and histological profile in male albino rats." Human and Experimental Toxicology. 42:1-11. (**IF=3.25**)
- 8. Faria Saher, Muhammad Umar Ijaz, Ali Hamza, **Qurat Ul Ain**, Muhammad Faisal Hayat, Tayyaba Afsar, Ali Almajwal, Huma Shafique, Suhail Razak. 2023. "Mitigative potential of rhoifolin against cisplatin prompted testicular toxicity: biochemical, spermatogenic and histological based analysis." Toxicology Research. 12(5):814-823. (**IF=2.7**)
- **9.** Muhammad Umar Ijaz, Shama Mustafa, **Qurat ul Ain**, Ali Hamza, Hussain Ahmed, Mohamed M. Abdel-Daim, Ghadeer M. Albadrani, Agnieszka Najda, Shafaqat Ali. 2023. "Eriodictyol attenuatesFuran induced testicular toxicity in Rats: Role of oxidative stress, steroidogenic enzymes and apoptosis." Ecotoxicology and Environmental Safety. 259:115003 (**IF=7.13**).
- **10.** Asma Waheed Qureshi, Roobi, **Qurat ul Ain,** Shafia Arshad, Zahida Parveen, Saira Farman. 2023. "Evaluation of Bacteriocin activity of Lactic Acid Bacteria (LAB) Isolates of Milk and Yogurt." Journal of Xi'an Shiyou University, Natural Sciences Edition. 19 (3):412-429 (**IF=0.38**).
- **11.** Shama Mustafa, Haseeb Anwar, **Qurat ul Ain,** Hussain Ahmed, Shabnoor Iqbal, and Muhammad Umar Ijaz. 2023. "Therapeutic effect of gossypetin against paraquatinduced testicular damage in male rats: a histological and biochemical study." Environmental Science and Pollution Research. 30(22):62237-62248. (**IF=5.05**).
- 12. Mehwish David, **Qurat ul Ain**, Sarwat Jahan, Mushtaq Ahmad, Qasim Shah, Tayyaba Afsar, Huma Shafique, Tariq Nahar Alanezi, Ali Almajwal, Umar Ijaz, Suhail Razak. 2022. "Determination of possible contraceptive potential of methanolic leaf extract of Mentha longifolia
  - L. in adult male rats: a biochemical and histological study." Toxicology Research. 11(6):951-961. (**IF=3.52**).
- 13. Shama Mustafa, Muhammad Umar Ijaz, **Qurat ul Ain**, Tayyaba Afsar, Ali Almajwal, Huma Shafique and Suhail Razak. 2022. "Isorhamnetin: a flavonoid, attenuated doxorubicin-induced testicular injury via regulation of steroidogenic enzymes and apoptotic signaling gene expressionin male rats". Toxicology Research. 11(3):475-485. (**IF=3.52**)
- **14. Qurat ul Ain,** Mehwish David, Muhammad Umar Ijaz and Sarwat Jahan. 2022. "Assessment of antiandrogenic and antispermatogenic activity of *Hedera nepalensis* in adult malerats". Andrologia. 54(3): e14353. (**IF= 2.77**)
- **15.** Tariq Iqbal, Sarwat Jahan, **Qurat ul Ain**, Hizb Ullah, C. Li., Chen, L., & Zhou, X. 2021. Ameliorative effects of morel mushroom (*Morchella esculenta*) against

- Cadmium-induced reproductive toxicity in adult male rats. Brazilian Journal of Biology, 82. (**IF**= 1.65)
- **16.** Mehwish David, Naheed Turi, **Qurat ul Ain**, Humaira Rahman, and Sarwat Jahan. 2020 "Evaluation of environmental effects of heavy metals on biochemical profile and oxidative stress among children at brick kiln sites." Archives of Environmental & Occupational Health. 2:1-9 (DOI10.1080/19338244.2020.1854645). (**IF= 1.20**)
- 17. Mehwish David, **Qurat ul Ain**, Muhammad Afzal, Muhammad Shoaib, Faiza Aman, Karen J. Cloete, Naheed Turi, and Sarwat Jahan. 2020. "Study of occupational exposure to brick kiln emissions on heavy metal burden, biochemical profile, cortisol level and reproductive health risks
  - among female workers at Rawat, Pakistan." Environmental Science and Pollution Research. 27(35):44073-44088. (**IF=3.06**).
- **18.** Ghazala Shaheen, Sarwat Jahan, **Qurat ul Ain**, Asad Ullah, Tayyaba Afsar, Ali Almajwal, Iftikhar Alam, and Suhail Razak. 2020. "Placental endothelial nitric oxide synthase expression and role of oxidative stress in susceptibility to preeclampsia in Pakistani women." Molecular genetics & genomic medicine 8(1): e1019. (**IF=2.79**)
- **19.** Mehwish David, **Qurat ul Ain**, Mushtaq Ahmad, Wajid Zaman, Sarwat Jahan. 2019 "A biochemical and histological approach to study antifertility effects of methanol leaf extract of Asplenium dalhousiae Hook. in adult male rats." Andrologia. 51(6): e13262. (**IF=1.95**)
- 20. Mavra Abbas, Mehwish David, **Qurat-Ul-Ain**, Mushtaq Ahmad and Sarwat Jahan.2019. "In vitro evaluation of contraceptive efficacy of asplenium dalhousiae hook. and Mentha longifolia L. on testicular tissues of adult male mice." Austin Pharmacol Pharm, 4, 1020.
- **21. Qurat ul Ain**, Mehwish David, Qasim Shah, Mushtaq Ahmad and Sarwat Jahan. 2018. "Antifertility effect of methanolic leaf extract of Chenopodium ambrosioides Hook. in maleSprague Dawley rats." Andrologia. 50(10): e13129. (**IF=1.95**)
- **22.** Sarwat Jahan, Abira Abid, Sidra Khalid, Tayyaba Afsar, **Qurat ul Ain**, Ghazala Shaheen, Ali Almajwal, and Suhail Razak. 2018. "Therapeutic potentials of Quercetin in management of polycystic ovarian syndrome using Letrozole induced rat model: a histological and a biochemical study." Journal of ovarian research 11(1): 26. (**IF=2.80**)
- 23. Sarwat Jahan, Asma Munawar, Suhail Razak, Sara Anam, **Qurat ul Ain**, Hizb Ullah, Tayyaba Afsar, Mahmoud Abulmeaty, and Ali Almajwal. 2018. "Ameliorative effects of rutin against cisplatin-induced reproductive toxicity in male rats." BMC urology 18(1): 107. (**IF=1.68**)
- **24.** Sarwat Jahan, Faryal Munir, Suhail Razak, Anam Mehboob, **Qurat ul Ain**, Hizb Ullah, Tayyaba Afsar, Ghazala Shaheen, and Ali Almajwal. 2016. "Ameliorative effects of rutin against metabolic, biochemical and hormonal disturbances in polycystic ovary syndrome in rats." Journal of Ovarian Research 9(1): 86. (**IF=2.80**)
- **25.** Hizb Ullah, Sarwat Jahan, **Qurat ul Ain**, Ghazala Shaheen, Nida Ahsan. 2016. "Effect of Bisphenol S exposure on male reproductive system of rats: A histological and biochemical study." Chemosphere.152: 383-391. (**IF=4.2**)
- **26.** Sarwat Jahan, Saima Rehman, Hizb Ullah, Asma Munawar, **Qurat ul Ain**, and Tariq Iqbal. 2016. "Ameliorative effect of quercetin against arsenic-induced sperm DNA damage and daily sperm production in adult male rats." Drug and chemical toxicology 39(3): 290-296. (**IF=2.3**)
- **27.** Sarwat Jahan, **Qurat ul Ain**, and Hizb Ullah. 2016. "Therapeutic effects of quercetin against bisphenol A induced testicular damage in male Sprague Dawley rats." Systems biology in reproductive medicine 62(2): 114-124. (**IF=1.94**)

#### **BOOK CHAPTERS- NATIONAL**

- Ain QU, Batool M, Sultan H, Mahmood M, Talib F and Bano S, 2024. Role of prebiotics and probiotics in biomedical sciences. In: Farooqi SH, Aqib AI, Zafar MA, Akhtar T and Ghafoor N (eds), Complementary and Alternative Medicine: Prebiotics and Probiotics. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 12-20. ISBN: 978-969-2201-15-5. https://doi.org/10.47278/book.CAM/2024.155.
- 2. Batool M, **Ain QU,** Bano S, Mahmood M, Sultan H and Talib F, 2024. Overview of nanoparticles and their biomedical applications. In: Ahmed R, Khan A, Abbas RZ, Farooqi SH and Asrar R (eds), Complementary and Alternative Medicine: Nanotechnology-II. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 180-188. ISBN: 978-969-2201-20-9. <a href="https://doi.org/10.47278/book.CAM/2024.244">https://doi.org/10.47278/book.CAM/2024.244</a>.
- 3. **Ain QU**, M Batool & S Imran, 2024. Toxicology implications of endocrine disrupting chemicals on reproduction. In: Zoology: Advancements and Research Trends (Ijaz MU, N Ehsan, M Imran & S Yousaf, eds): FahumSci, Lahore, Pakistan, pp: 44-51. ISBN: 978-627-7745-02-8. https://doi.org/10.61748/Zool.2024/07.
- 4. **Ain QU, M** Batool, F Talib, M Mahmood & S Imran, 2024. Toxicology consequences of heavy metal exposure on male fertility. In: Zoology: Advancements and Research Trends (Ijaz MU, N Ehsan, M Imran & S Yousaf, eds): FahumSci, Lahore, Pakistan, pp: 52-60. ISBN: 978-627-7745-02-8. https://doi.org/10.61748/Zool.2024/08.
- 5. Batool M, **QU Ain** & S Imran, 2024. Fish immunology: Understanding the interaction between pollutants and the immune system. In: Zoology: Advancements and Research Trends (Ijaz MU, N Ehsan, M Imran & S Yousaf, eds): FahumSci,\_Lahore, Pakistan, pp: 206-214. ISBN: 978-627-7745-02-8. https://doi.org/10.61748/Zool.2024/26.
- 6. David M, S Jahan & **QU Ain**, 2024. Use of medicinal plants as contraceptive. In: Zoology: Advancements and Research Trends (Ijaz MU, N Ehsan, M Imran & S Yousaf, eds): FahumSci, Lahore, Pakistan, pp: 278-290. ISBN: 978-627- 7745-02-8. https://doi.org/10.61748/Zool.2024/35.

## ORAL PRESENTATIONS/PUBLICATION IN CONGRESSES:

- **1.** O-21/ICAZ-2024 -Mamoona Mahmood, Moazama Batool, Qurat Ul Ain, Asma Aziz, Sadia Maalik, Sajida Mushtaq, Mehwish David. Effects of di-butyl and di-isononyl phthalate on antioxidant enzyme status and DNA damage in *Cyprinus carpio* (Common carp). 7<sup>th</sup> International Conference on Applied Zoology organized by The Applied Zoological Society of Pakistan Held on 22 -23<sup>rd</sup> October 2024.
- **2.** O-109/ICAZ-2024- Fatima Talib, Qurat Ul Ain, Moazama Batool, Mehwish David, Ayesha Saddiqa, Sajida Mushtaq, Sadia Maalik. Therapeutic Potential of Vitamin C and Zinc against Furan Induced Reproductive Toxicity in Rats. 7<sup>th</sup> International Conference on Applied Zoology organized by The Applied Zoological Society of Pakistan Held on 22 -23<sup>rd</sup> October 2024.
- 3. **IC-SOSDG-24-**Moazama Batool, **Qurat Ul Ain,** Saiqa Rauf, Mehroz Khalid, Fatima Siddique. Assessment of Insecticides Induced Organ Impairment in *Cyprinus Carpio* Through Biochemical and Histological Analysis. 6th International Conference SCIENTIFIC OUTLOOK OF SUSTAINABLE DEVELOPMENT GOALS (IC-SOSDG-24) organized by Women University Mardan held on 15-16th January, 2024.
- 4. IC-SOSDG-24-Qurat Ul Ain, Moazama Batool, Hafsa Sultan, Jwaher, Hira. Histopathological Alterations and Oxidative Stress Associated with Chlorpyrifos and

- Bifenthrin in *Hypophthalmichthys Molitrix*. 6th International Conference SCIENTIFIC OUTLOOK OF SUSTAINABLE DEVELOPMENT GOALS (IC-SOSDG-24) organized by Women University Mardan held on 15-16th January, 2024.
- 5. O-16/ICAZ-2023- Sadia Maalik, Sajida Mushtaq, Naheed Bano, Moazama Batool, Nazia Ehsan and Ayesha Hafeez. Development of SCAR marker using PCR based RAPD primers for Molecular based identification of *Cotesia glomerata* (Braconidae: Hymenoptera). 6<sup>th</sup> International Conference on Applied Zoology (ICAZ-2023) organized by Department of Zoology. Govt. College University Faisalabad in collaboration with the Applied Zoological Society of Pakistan (AZSP), held on 18-19 December, 2023.
- 6. WD-EST23-Wajeeha Tanweer, Sajida Mushtaq, Sadia Maalik, Qurat Ul Ain and Moazama Batool. Toxicity of insecticides bifenthrin and fipronil against Oxya japonica (Orthoptera: Acrididae). 1st International Conference on Women Development in Engineering, Science & Technology (WD-EST'23) organized by Women Engineer Development Committee, Pakistan Engineering Council & Mehran University of Engineering & Technology, Jamshoro, held on 03-05 October, 2023.
- 7. WD-EST23-Aleena Yousaf, Sadia Maalik, Sajida Mushtaq, Moazama Batool and Qurat Ul Ain. Effect of selected insecticides on Coleopteran foliage fauna of district Sialkot. 1st International Conference on Women Development in Engineering, Science & Technology (WD-EST'23) organized by Women Engineer Development Committee, Pakistan Engineering Council & Mehran University of Engineering & Technology, Jamshoro, held on 03-05 October, 2023.
- 8. **PC-26-**Tasneem Kauser, Sajida Mushta, Sadia Maalik, Moazama Batool, **Qurat Ul Ain** and Naheed Bano. Diversity of Aphids and assessment of potential of their selected natural enemies in district Sialkot, Punjab, Pakistan. 41<sup>st</sup> PAKISTAN CONGRESS OF ZOOLOGY (International) March 16-18, 2023, Organized by Institute of Zoology, University of the Punjab, Lahore.

## AREAS OF LABORATORY/RESEARCH EXPERTISE

- Animal handling and breeding
- *In vitro* and *in vivo* experimentations
- Histological Analysis/Stereological Analysis
- ELISA
- Immunohistochemistry
- Semen analysis/CASA
- Comet Assay
- Molecular and Biochemical Analysis
- DNA/RNA extraction/ Gel electrophoresis
- RT PCR

## **COMPUTER AND SOFTWARE SKILLS**

• MS Office, SPSS, GraphPad Prism, Image J2x, Casplab software, Goggle earth mapping.

# RECENT WORKSHOPS/CONFERENCES AND SEMINARS/TRAINING

S. No.	Title	Venue & Dates	Organizers
	Organizing committee memer of a one day Seminar on "Shrimp Farming" with Walk/Project/Cooki ng Competition on World Fisheries	Auditorium, GCWUS (December 03, 2024)	Department of Zoology at GCWUS.
2.	Organizing committee member of Poster Competition on "Life Below Water" (SDG-14)	Department of Zoology at GCWUS (December 03, 2024)	Department of Zoology at GCWUS.
3.	Organizing committee member of Poster Competition on "Life on Land" (SDG-15)	Department of Zoology at GCWUS (December 03, 2024)	Department of Zoology at GCWUS.
4.	Organizer of Two Days Hands on Training on "Handling of Laboratory Animals in Biomedical Research"	Auditorium, GCWUS (October 15-16, 2024)	Zoological Society in collaboration with ORIC, GCWUS.
5.	Organizing committee member of Anti-dengue campaign on "Collaborative and Comprehensive Approaches towards Dengue Management"	Auditorium, GCWUS (November 06, 2024)	Anti-Dengue Committee and Department of Zoology, GCWUS
6.	Organizing committee member of "Pink ribbon campaign" and seminar on "Awareness of Breast Cancer"	Auditorium, GCWUS (October 18, 2024)	Blood Donor and Health Society in collaboration with Social Work and Pink Ribbon Socities, GCWUS
7.	Oral Presentation on 6th International Conference on "Scientific Outlook Of Sustainable Development Goals"	The Margala Hotel, Islamabad. January 15-16, 2024	Women University of Mardan in Partial Collaboration with OIC, COMSTECH & PASTIC Islamabad.

8.	Organized "Awareness seminar on "World AIDS Day"	Auditorium, GCWUS (December 05, 2023)	Department of Zoology, in collaboration with Blood Donor and Health Society, GCWUS
9.	World Fisheries Day	Auditorium, GCWUS (November 28, 2023)	Department of Zoology, GCWUS
10	A webinar on "How to Become More Sustainable in the Lab - Approaches, Tips and Tricks AM"	Online (November 15, 2023)	The Life Science business of Merck KGaA, Darmstadt, Germany
11	Attended webinar on "Navigating the pathways of publishing in High- quality journals"	Online on Zoom (November 08, 2023)	Researcher Academy, Elsevier
12	Attended seminar on "Breast Cancer Awareness"	Auditorium, GCWUS (November 01, 2023)	Blood Donor and Health Society in collaboration with Directorate of Student Affairs. GCWUS
13	Online workshop on "Building Tomorrow's Global Genomic Workforce"	Online on Zoom (September 28, 2023)	ICESCO/INTERGEN/COMSATS
14	Attended training on"Endnote software"	Conference room, GCWUS (April 03, 2023)	Department of Zoology, GCWUS
15	2 week training on"Professional Development ofFaculty"	GCWUS (July 1, 2022)	Higher Education Commission, Islamabad
16	A webinar on "ResearchData-Why It Matters and How to Manage"	Online on Zoom(July 14, 2022)	Researcher Academy, Elsevier
17	Two-Day Online Workshop on "Fundamentals and Applications of NuclearMagnetic Resonance Spectroscopy (NMR)"	Women University, Mardan(October 26-27, 2021)	Women University, Mardan
18	A Seminar on: "Covid-19 and Vaccination Campaign in Italy at Glance"	Auditorium, GCWUS(November 22, 2021)	Department of Zoology, GCWUS

19	A webinar on "Global Importance of Parasite Disease Epidemiology and Drug Resistance in Animals and Humans"	Online on MS Teams(April 2, 2021)	Department of Zoology, GCWUS
20	Fundamentals of ProjectManagement	Online course on MSTeams (March 27-April 3, 2021)	NAHE HEC in collaboration with Oxon Global.
21	1-Day workshop on "GGP2: Structuring apublishable paper"	Online on Zoom (March15, 2021)	Emerlad Publishing
22		Online course on MSTeams (Feb 11, 2021)	National Academy of Higher Education (NAHE), HEC
23	One month training on "National Faculty Development Program"	Online on MS Teams andZoom (April 27-May 23, 2020)	National Academy of Higher Education (NAHE), HEC