

## CURRICULUM VITAE

### Dr. Abdul Ghaffar

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| Father's Name                | Nazir Ahmed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Date of Birth                | April 4, 1972                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| CNIC #                       | 35202-5365831-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Field of Specialization      | Paleontology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Field of Research Activities | Vertebrate Paleontology, Paleoecology, Paleoclimates & Biometeorology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Address: Office              | Department of Zoology, Cholistan University of Veterinary & Animal Sciences (CUVAS), Bahawalpur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Address: Residence           | House No. 4A, Officer residences, CUVAS, Bahawalpur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Web Address- IDs             | <p><b>LinkedIn</b> = <a href="https://www.linkedin.com/in/prof-dr-abdul-ghaffar-5a57b054/">https://www.linkedin.com/in/prof-dr-abdul-ghaffar-5a57b054/</a></p> <p><b>ResearchGate</b> = <a href="https://www.researchgate.net/profile/Abdul-Ghaffar-53">https://www.researchgate.net/profile/Abdul-Ghaffar-53</a></p> <p><b>Google scholar</b> = <a href="http://cuvas.edu.pk/Faculties/FBS/zoology/faculty/guffar.htm">http://cuvas.edu.pk/Faculties/FBS/zoology/faculty/guffar.htm</a></p> <p><b>Web of Science page address</b> =GOP-3089-2022</p> <p><b>ORCID</b></p> <p><a href="https://orcid.org/0000-0003-0969-577X">https://orcid.org/0000-0003-0969-577X</a></p> |
| Employment                   | <p><b>Dean, Faculty of Bio-Sciences, Cholistan University of Veterinary &amp; Animal Sciences (CUVAS) Bahawalpur</b></p> <p>Teaching, Research &amp; Academic Administration</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8 October 2019 – Present     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28 January 2019 – 07 December 2020 | <b>Chairman, Department of Zoology, Cholistan University of Veterinary &amp; Animal Sciences (CUVAS) Bahawalpur</b><br>Teaching, Research & Administration                                                                                                                                                                                                                                                                                                        |
| 16 December 2018 – Present         | <b>Professor Department of Zoology, Cholistan University of Veterinary &amp; Animal Sciences (CUVAS) Bahawalpur</b><br>Teaching & Research                                                                                                                                                                                                                                                                                                                        |
| 6 February 2014 – 15 December 2018 | <b>Associate Professor, Department of Meteorology, COMSATS University, Islamabad</b><br>Teaching MS and PhD courses. Supervising MS & PhD students in the field of Biometeorology/Applied Ecology/Paleoclimatology.                                                                                                                                                                                                                                               |
| 23 November 2005– 5 February 2014  | <b>Assistant Professor, Department of Meteorology, COMSATS University, Islamabad</b><br>Teaching MS and PhD courses. Supervising MS & PhD students in the field of Biometeorology and Paleoclimatology. Introduced the courses of Biometeorology and Paleoclimatology in the department of Meteorology for the first time in Pakistan.                                                                                                                            |
| 19 May 2005 – 22 November 2005     | <b>Adjunct Faculty at Institute of Education and Research (IER) and Institute of Clinical Psychology, University of the Punjab, Lahore</b><br>Teaching and Research of Biology 1 and Teaching of Biology to MS. Ed students at IER and Auxiliary Zoology (Epidemiology of different diseases) to BS students                                                                                                                                                      |
| January 2001 – March 2005          | <b>PhD Student in the Department of Zoology, University of the Punjab, Lahore, Pakistan</b> Worked on the project “Studies on equids, cervids and Carnivora from the Siwalik Hills of Pakistan”.                                                                                                                                                                                                                                                                  |
| November 1996 - December 2000      | <b>Public Information Officer with the Aventis group (Aventis Biological Division France)</b><br>Worked as group leader to gather data of different Endemic and Epidemic diseases from Punjab and KPK province. Organized number of workshops regarding the Community Awareness and Public Health Programs with the involvement of General practitioners (GP’s), Pediatricians (child specialists) and other medical community from different cities of Pakistan. |
| <b>Education</b>                   | <ul style="list-style-type: none"> <li>• <b>PhD</b> Paleontology, University of the Punjab, Lahore, Pakistan (2005)</li> <li>• <b>M.Sc.</b> Life Sciences (Zoology), University of Punjab,</li> </ul>                                                                                                                                                                                                                                                             |

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|  | <p>Lahore, Pakistan (1996)</p> <p><u>Major subject:</u> Microbiology</p> <ul style="list-style-type: none"> <li>• <b>B.Sc.</b> Medical group, Islamia University Bahawalpur, Pakistan (1993)</li> </ul> <p><u>Subjects:</u> Zoology, Botany, Chemistry</p> <ul style="list-style-type: none"> <li>• <b>F.Sc</b> Pre-Medical group from Intermediate secondary Board Bahawalpur (1991)</li> </ul> <p><u>Subjects:</u> Biology, Chemistry, Physics</p> <ul style="list-style-type: none"> <li>• <b>Matric</b> Science group, from Intermediate secondary Board Bahawalpur (1988)</li> </ul> <p><u>Subjects:</u> Science Group</p> |
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### Post PhD Experience (21 years)

| Name of Organization            | Post held                                                        | Job Profile                         | Duration                      |
|---------------------------------|------------------------------------------------------------------|-------------------------------------|-------------------------------|
| CUVAS                           | Dean<br>October 8, 2019– To-date                                 | Teaching, Research & Administration | Continue                      |
| CUVAS                           | Chairman<br>January 28, 2019– December 7, 2020                   | Teaching, Research & Administration | -----                         |
| CUVAS                           | Professor<br>December 16, 2018– To-date                          | Teaching, Research & Administration | Continue                      |
| COMSATS (CUI)                   | Associate Professor<br>February 6, 2014–December 15, 2018        | Teaching and Research               | 04 years, 10 months & 10 days |
| COMSATS (CUI)                   | Assistant Professor<br>November 23, 2005–February 5, 2014        | Teaching and Research               | 08 years, 02 months & 14 days |
| University of the Punjab Lahore | Assistant Professor (Visiting)<br>May 19, 2005–November 22, 2005 | Teaching and Research               | 06 months & 03 days           |
| Pre-PhD Experience              | Research & Teaching Assistant                                    | Research and Lab. & Field Work      | 8 years                       |

### Professional Training

| Title | Duration | Institution |
|-------|----------|-------------|
|-------|----------|-------------|

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|---------------------------------------------------|-----------------------------|-----------------------------------------------------------------|
| Advance Training in Seismo-tectonics              | 23-29 November 2007         | NORSAR (Norway) and PMD (Pakistan)                              |
| Teaching Skills: Faculty Development Program      | 4 October – 4 November 2011 | Faculty Development Academy<br>COMSATS Head Quarters, Islamabad |
| Train the Trainers: Workshop on Counseling Skills | 7-9 July 2009               | COMSTS University (CUI), Islamabad                              |

### **Distinction**

Introduced the subject of Biometeorology for the first time in Pakistan and started research on Dengue Dynamics (i-e an integrated approach on Climate, Urbanization and Dengue spread in Pakistan). On these aspects one student (Dr. Bushra Khalid) under my supervision completed her PhD in 2015 with significant publications in highly reputed journals and further research is in progress with more important publications helpful in Dengue control and mitigation strategies at National and Institutional levels. On the accomplishment of this work, she has received Gro Brundtland Award in February 2016 working towards the issues of sustainable development and equitable health systems with my Co-authorship.

### **Services to Institutions**

- Member, Advisory Board, Journal of Biological and Public Health (JBPH), Government College University (GCUL), Lahore
- Research collaborations with University of the Punjab, Lahore, GC, University Faisalabad, Azad Jammu and Kashmir University, Muzaffarabad, Ghazi University, D. G. Khan.
- Research collaborations particularly GIS, Paleontology and Geology integration with Pakistan Museum of Natural History (PMNH), Islamabad
- Subject specialist for the appointments on BPS and TTS in Zoology for Mian Muhammad Nawaz Shareef University of Agriculture, Multan (2022).
- Subject specialist for the appointments on BPS and TTS in Zoology for College of Earth and Environmental Sciences, University of the Punjab, Lahore (2011).
- External examiner for B. S, M. Sc, M.S and PhD University of the Punjab, Lahore, GC University, Faisalabad.
- External examiner for M. Sc Azad Jammu and Kashmir University, Muzaffarabad
- External examiner for BS and M. Sc and M. Phil, Fatima Jinnah Women University, Rawalpindi
- External examiner for M. Phil. and PhD for Govt. College Sadiq Women University, Bahawalpur.
- External examiner for M. Sc, M. Phil, and Ph. D., Ghazi University, D. G. Khan
- External examiner for M. Phil and Ph. D., The Islamia University Bahawalpur

- Member Review Committee for the International Journal of Biometeorology
- Member Review Committee for the International Journal of Climatology
- Member Review Committee for the International Journal of Environmental Pollution
- Member Review Committee for the Journal of Applied Animal Science
- Member Review Committee for the Journal of Brazilian journal of Biology
- Member Review Committee for the Journal of Geological Journal
- Member Review Committee for the Journal of Historical Biology
- Member Review Committee for the Journal of Paleoworld
- Member Review Committee for the Journal of Plos One
- Member Review Committee for the Journal of Chemosphere
- Member Review Committee for the Punjab University Journal of Zoology
- Member Review Committee for the Journal of Animal and Plant Sciences
- Member Review Committee for the Journal of Biologia
- Academic Member of the Athens Institute for Education and Research, belonging to the Environment Research Unit and the Public Health Research Unit.
- Member International Society of Biometeorology

### **Services to the Community**

- Public awareness for the environmental threats on Human Health and other living organisms such as disease epidemics and other morbidity and mortality related environmental issues.
- To address the extinctions and migrations of different species under these hazards
- Community reconstruction analysis in earthquake prone areas
- Monitored the onset of Pests attack on cotton yield from 2006-2010 yields, Punjab, Pakistan
- Focuses the community problems and provide guidance to future environmental aspects by creating awareness in terms of teaching, research, workshops etc.

### **General work for students**

- Convener, BoF, Faculty of Bio-Sciences, CUVAS, Bahawalpur (October 2019-Continue)
- Convener, BoS, Department of Zoology, CUVAS, Bahawalpur (January 2019-December 2020)
- Conducted BoS, BoF as a Convener and participated in Academic Council as member for Department Zoology/ Faculty of Bio-Sciences at CUVAS, Bahawalpur
- Developed course contents at BS, MS and PhD levels: Paleontology &

Zoogeography, Paleontology & Biogeography, Ecosystems and Biodiversity, Fundamentals of Biometeorology, Advanced Biometeorology and Paleoclimatology for BS, M.Phil/MS & PhD students.

- Attained funding to meet the financial constraints of research students in terms of money and equipment's by HEC funded projects as PI.
- Member, Board of Studies, Department of Meteorology, COMSATS, Islamabad

### **General work for Institutions**

**At CUVAS;** Convener Admission Policy for CUVAS Employees in Undergraduate Degree Programs, Organizer, 1<sup>st</sup> International Conference on Genetic Genes Innovations for Dairy Improvement 2026, Convener, Postgraduate Program Review Committee, Member Ethical Review Committee, Member Scrutiny Committee for Teaching and Non-Teaching Posts, Convener, Scrutiny Committee for Professors, Convener updated SoS Committee, Convener, Migration Committee, Member ORIC Steering Committee, Member steering Committee for BIC, Convener, Fact Finding/Inquiry Committee, Convener, Monitoring & Evaluation Committee, Member, Extension Committee for Joining of Employees, Convener, Offices/rooms affairs Committee, Convener, establishment of Institute of Business Administration, Convener Memorandum of Understanding's (MOU,s)/ Letters of Acceptance (LOA) Committee, Convener HEC Thematic Competitions, Convener/In charge BS Biotechnology Program, Convener Tree Plantation (Green Pakistan) Committee, Convener Transport Committee, Convener Recruitment Committee for the eligibility for Assistant Professors & Lecturers, Member Finance and Planning Committee, Director Student Affairs (DSA) till March 2020, Convener, Anomaly Committee, Convener, Discipline Committee, Convener Admission Committee, Convener Grievance Committee (Recruitment), Convener Selection Committee for visiting faculty, Convener selection committee for sub-engineers (electrical/mechanical), telephone operators. Member Ehsass Scholarship Committee.

**At COMSATS;** MS Program Coordinator, Member Proctorial Board, Member CDC (Campus Discipline Committee), Member Department Academic Review Committee (DARC), Member Admission Committee, Member Quality assurance Unit (QAU), Member Quality Enhancement Cell (QEC), Member Campus Supervisory Committee, Member Vigilance Committee for examinations Islamabad Campus, Convener Departmental Guest Lecture Committee, Member Departmental Financial Committee for the deserving students for Qarz-e-Hasna.

### **Presented Key Note Papers in International Conferences**

- Dengue spread in Pakistan, Facts and Factors responsible for the outbreak of this disease and its mitigation strategies. 33<sup>rd</sup> International Geographical Congress (IGC), August, 21-25, 2016, Beijing China.
- Extreme Past events and Dengue spread in major cities of Pakistan. 13<sup>th</sup> CAS-TWAS-WMO Forum, International Symposium on Extreme Weather and Climate: Past, Present, Future, September 8-11, 2014, Beijing, China.
- 27th Himalaya-Karakoram-Tibet (HKT) Workshop 28-30 November 2012, Kathmandu, Nepal.
- 11th International Workshop on Terrestrial Ecosystems under the Changing Climate 2-5 September 2012, CAS-TWAS-WMO Forum, Beijing China.
- International Training Workshop on Science Education for sustainable Development, 27-28 Jun, 2011, Dhaka, Bangladesh.
- 31 International Congress of Zoology, April 19-21, 2011 at University of AJ &K Muzaffarabad.

### **Participation**

Organized (Chief organizer) 1<sup>st</sup> International Workshop on Biodiversity: Techniques and Tools, as part of “Exhibition on Biodiversity Conservation of Cholistan Desert”, 4-5 April 2019

Organized (Member Organizing Committee) an International Conference on Asian Monsoon and Climate Change, 20-21 January 2014.

Organized (Member Organizing Committee) an International Workshop on Climate Change and Sustainable Management of Water Resources in Asia-Pacific Region, 22-24 November 2011.

### **Publications (Impact Factor)**

1. Nadeem, M., **Ghaffar, A.**, Ajmal, M. S., Bilal, I., Hassanien, H. A., Abdelwahid, H. H., Abbas, A. O., Shawky, M. 2025 (submitted). Comparative Analysis of Enamel Hypoplasia in Domestic and Grazing Cattle. *Tropical Animal Health and Production*
2. Iqbal, S., **Ghaffar, A.**, Shah, S. Q. A. and Rauf, M. 2025 (In press). *Miotragocerus* (Bovidae, Mammalia) from the Late Miocene Deposits of Zinda Pir Dome of Sulaiman Range, DG Khan, Punjab, Pakistan. *Journal of Animal and Plant Sciences (JAPS)*.
3. Ishaq, H. M., Yasin, R., Bibi, S., Abbas, A., Ara, C., Samiullah, K., Enderson, E. H., Muzaffar, E., López-Torres, S., **Ghaffar, A.**, Khan, M.N., Muzaffar, E., Faiz, M. and Bibi, A. 2025 (under review). Late Miocene Hipparionine Fossils from the Dhok Pathan Formation of Pakistan: Paleoenviromental Implications. *Journal of Vertebrate Paleontology*.

4. Faizan, M., **Ghaffar, A.**, Samiullah, K., Kumar, S. and Abbas, T. 2026. Artiodactyla fossil remains from a new locality, Drebh, Sulaiman Range, South Punjab, Pakistan, and their relation with other continental deposits. *Historical Biology*, pp1-35 <https://doi.org/10.1080/08912963.2026.2715636>
5. **Ghaffar, A.**, Yasin, R., Iqbal, S., Samiullah, K. and Faizan, M. 2026. Mammalian Fossils from Drebh, Sulaiman Range: A New Locality in South Punjab, Pakistan. *Geological Journal*, pp1-32 <https://doi.org/10.1002/gj.70452>
6. Iqbal, S., Faizan, M., Shahzad, M., Faiz, M., and **Ghaffar, A.** 2026. Fossil study of Pigs (Family Suidae) from Litra-Chaudhwan Formation of Sulaiman Range. *Pakistan J. Zoology* 58(4): 1609-1614 DOI: <https://dx.doi.org/10.17582>
7. Iqbal, S., **Ghaffar, A.**, Shah, S. Q. A. and Rauf, M. 2025. Fossil mammals from the new locality Gazlope, Sakhi Sarwar, Sulaiman Range, District Dera Ghazi Khan, South Punjab, Pakistan. *Historical Biology* DOI: 10.1080/08912963.2025.2565738
8. Muneer, A., Xu, C., Shah, S. Q. A., Aqib, A. I., Ali, M. M., **Ghaffar, A.** Ataya, F. S. and Li, K. 2025. Insights into structure, toxicity and antibacterial potential of tungsten oxide–carbon nanocomposites coupled with antibiotics. *Scientific Reports*. 15:39529 DOI: | <https://doi.org/10.1038/s41598-025-23257-8>
9. Muneer, A., Shah, S. Q. A., Aqib, A. I., Ali, M. M. and **Ghaffar, A.** 2025. Infection Dynamics of Salmonella enterica in Houbara Bustard and Resistance Modulation through Nanocomposites Coupled Antibiotics. *Pakistan Veterinary Journal*. DOI: 10.29261/pakvetj/2025.227
10. Raza, T., Yasin, R., López-Torres, S., Warburton, N.M., Samiullah, K., **Ghaffar, A.**, Khan, M.N., Ara, C. and Muzaffar, E. 2024. New Sivatheriine giraffid (Ruminantia, Mammalia) craniodental material from the Siwaliks of Pakistan. *Journal of Vertebrate Paleontology*. 44(1) DOI: 10.1080/02724634.2024.2376241
11. **Ghaffar, A.**, Yaseen, R., Samiullah, K., and Aisha, Q. 2024. New remains of *Dinocrocuta* (Percrocutidae; Carnivora,) from Markhal, Dhok Pathan Formation, Pakistan. *Historical Biology*, 36(11): 2511-2519 <https://doi.org/10.1080/08912963.2023.2263866>
12. Waseem, M.T., Shehzad, M. I., Khan, A.M., **Ghaffar, A.** and Quade, J. 2024 (accepted): What is and What will be? The future of Climate through Climate Modelling: A study from Sub-Tropical Region (Pakistan). *Springer Nature*, pp241-244. [https://doi.org/10.1007/978-3-031-47079-0\\_54](https://doi.org/10.1007/978-3-031-47079-0_54)

13. Aftab, K., Khan, M.A., Babar, M. A., Abbas, S. G., **Ghaffar, A.**, Akhtar, M., Iqbal, R. & Afsheen, S. 2022. New hipparionine fossils from the Dhok Pathan Formation of Punjab, Pakistan, *Historical Biology*, 34(7): 1218-1227. <https://doi.org/10.1080/08912963.2021.1970152>
14. Waseem, M.T., Khan, A.M., Quade, J. and **Ghaffar, A.** 2021: Palaeoclimate and Dietary Niche of Family Cervidae from The Siwaliks (Pakistan): Does Coeval Occurrence of Species Leads to Niche Partitioning?. *Springer Proceedings of 1<sup>st</sup> MedGU 4*: 205-208. DOI:[10.1007/978-3-031-42917-0\\_47](https://doi.org/10.1007/978-3-031-42917-0_47)
15. Khalid, B., Bueh, C. and **Ghaffar, A.** 2021. Assessing the Factors of Dengue Transmission in Urban Environments of Pakistan. *Atmosphere*, 12(6): 773; <https://doi.org/10.3390/atmos12060773>
16. Waseem, M.T., Khan, A.M., **Ghaffar, A.**, Iqbal, A. and Ahmad, M. R. 2021. Plaeodietary and Palaeoclimatic Reconstruction for late Miocene Hipparionines from the Siwaliks of Pakistan. *Pakistan Journal of Zoology*, 52(3): 1035-1043. <https://dx.doi.org/10.17582/journal.pjz/20180314070354>
17. **Ghaffar, A.**, Akhtar, M. Khan, M. A. and Babar, M. A. 2019. Comments on *Percrocuta carnifex* based on the new fossil material from Nagri Formation (Middle Siwaliks) Hasnot, Pakistan. *Geologica Acta*, 17(3): 1-9; DOI: [10.1344/GeologicaActa2019.17.3](https://doi.org/10.1344/GeologicaActa2019.17.3)
18. Haider, S. and **Ghaffar, A.** 2019. Observed, Simulated and Projected Extreme Climate Indices over Pakistan in changing Climate. *Theoretical and Applied Climatology*, 137: 255-281; [Doi.org/10.1007/s00704-018-2573-7](https://doi.org/10.1007/s00704-018-2573-7)
19. Khan, J., Khan, I., **Ghaffar, A.** and Khalid, B. 2018. Epidemiological Trends and the risk factors associated with Dengue disease in Pakistan (1980-2014): a systematic literature search and analysis. *BMC Public Health* 18:745. DOI: [10.1186/s12889-018-5676-2](https://doi.org/10.1186/s12889-018-5676-2)
20. Khan, J., **Ghaffar, A.** and Khan, S.A. 2018. The changing epidemiological pattern of Dengue in Swat, Khyber Pakhtunkhwa. *PLoS ONE* 13(4): e0195706. [https://Doi.org/10.1371/journal.pone.0195706](https://doi.org/10.1371/journal.pone.0195706)
21. Abbas, S. G., Babar, M. A., Khan, M.A., Aftab, K., Riaz, A., **Ghaffar, A.** and Akhtar, M. 2018. Fossil Bovidae from Late Miocene Dhok Pathan Formation of Siwaliks, Northern Pakistan. *Pakistan Journal of Zoology*, 50(1): 217-228. DOI: [http://dx.doi.org/10.17582/journal.pjz/2018.50.1.217.228](https://dx.doi.org/10.17582/journal.pjz/2018.50.1.217.228)

22. **Ghaffar, A.**, Akhtar, M. Babar, M.A. and Roohi, G. 2018. Cervidae from Dhok Pathan and Hasnot areas (Dhok Pathan Formation) and comments on the age of these sediments. *Revista Brasileira de Geologia (=RBG)*, **21(2)**: 132-140. doi:10.4072/rbp.2018.2.04
23. **Ghaffar, A.**, Siddiq, M. K., Akhtar, M., Khan, M. A, Khan, A.M and Azeem, M.I. 2017. Antler remains (Cervidae, Artiodactyla, Mammalia) from a new locality in the Pinjor Formation (1.6-0.8 MA), Pakistan. *Revista Brasileira de Geologia (=RBG)*, **20(1)**: 23-30. doi: 10.4072/rbp.2017.1.02
24. **Ghaffar, A.**, Khan, H and Malik, A. 2016. Geospatial analysis of deforestation in Swat, Khyber Pakhtunkhwa from 2000-2011, *Revista Pădurilor*. **131(1-2)**: 77-87.
25. Siddiq, M. K., Akhtar, M., Khan, M.A., **Ghaffar, A.**, Sarwar, K. and Khan, A. M. 2016. New Fossils of Rhinoceros (Rhinocerotidae) from the Soan Formation (Plio-Pleistocene) of Northern Pakistan. *Pakistan Journal of Zoology*, **48(3)**: 657-664.
26. **Ghaffar, A.** and Akhtar, M. 2016. New material of *Sivaonyx bathygnathus* (Lutrinae, Mustelidae) from the Early Pliocene of Siwaliks, Pakistan. *Revista Brasileira de Geologia (=RBG)*, **19(2)**: 347-356. Doi: 10.4072/rbp.2016.2.16
27. Fareed, N., **Ghaffar, A.** and Malik, T.S. 2016. Spatio-Temporal Extension and Spatial Analyses of Dengue from Rawalpindi, Islamabad and Swat during 2010-2014, *Climate Journal*, **4**, 23. Doi:10.3390/cli4020023
28. Khalid, B and **Ghaffar, A.** 2015. Environmental Risk Factors and Hotspot Analysis of Dengue Distribution in Pakistan, *International Journal of Biometeorology*, **59**: 1721-1746. DOI: 10.1007/s00484-015-0982-1
29. **Ghaffar, A.**, Akhtar, M., Khan, M.A. and Siddiq, M. K. 2015. New Fossil Remains of Family Cervidae from the Dhok Pathan Formation (Middle Siwaliks) of Pakistan. *Geosciences Journal*, **19(4)**: 631-639. DOI 10.1007/s12303-015-0001-x
30. Khalid, B and **Ghaffar, A.** 2015. Dengue Transmission Based on Urban Environmental Gradients in Different Regions of Pakistan. *International Journal of Biometeorology*, **59**: 267-283. DOI: 10.1007/s00484-014-0840-6
31. **Ghaffar, A.**, Akhtar, M., Samiullah, K. Khan, A. M., Iqbal, M. and Khan, M. A. 2012; Discovery of antler from a new site in the Pinjor Formation (Pleistocene) of Pakistan. *Journal of Geological society, India*. **80**: 119-122. Doi.org/10.1007/s12594-012-0125-9

32. **Ghaffar, A.** and Akhtar, M. 2012; New fossil record of *Hyaenictitherium pilgrimi* (Carnivora: Hyaenidae) from Dhok Pathan Formation of Hasnot, Pakistan. *Swiss Journal of paleontology*, **131(2)**: 275-281. DOI [10.1007/s13358-012-0042-y](https://doi.org/10.1007/s13358-012-0042-y)
33. Bhatti, Z.H., Khan, M.A., Akhtar, M., Khan, A. M., **Ghaffar, A.**, Iqbal, M. and Siddiq, M. K. 2012. *Giraffa punjabiensis* (Giraffidae: Mammalia) from Middle Siwaliks of Pakistan. *Pakistan Journal of Zoology*, **44(6)**: 1689-1695.
34. Bhatti, Z.H., Khan, M.A., Akhtar, M., Khan, A. M., **Ghaffar, A.**, Iqbal, M. and Ikram, T. 2012. Giraffokeryx (Artiodactyla: Mammalia) Remains from the Lower Siwaliks of Pakistan. *Pakistan Journal of Zoology*, **44(6)**: 1623-1631.
35. **Ghaffar, A.**, Akhtar M. and Nayyaer, A.Q. 2011. Evidences of Early Pliocene fossil remains of tribe Cervini (Mammalia, Artiodactyla, Cervidae) from the Siwaliks of Pakistan, *JAPS*. **21(4)**: 830-835.
36. **Ghaffar, A.**, Akhtar, M., Khan, M.A., Samiullah, K. and Khan, A. M. 2011; *Cervus cf rewati* (Cervidae) from Dhok Pathan Formation (Middle Siwaliks), Pakistan. *Austrian Journal of Earth Sciences*, **104/1**: 107-113.
37. **Ghaffar, A.** and Javid, M. 2011. Impact of Global Warming on Monsoon Variability in Pakistan. *Journal of Animal and Plant Sciences*, **21(1)**: 107-110.
38. **Ghaffar, A.**, Akhtar, M., Butt, M. J., Khan, M.A. and Ikram, T. 2011. Late Miocene Hyaenids from the Middle Siwaliks of Pakistan. *Pakistan Journal of Zoology*. **43(5)**: 855-862.
39. Khan, M.A., Iliopoulos, G., Akhtar, M., **Ghaffar, A.** and Haq, Z. 2011. The longest tusk of cf. *Anancus sivalensis* (Proboscidea, Mammalia) from the Tatrot Formation of the Siwaliks, Pakistan. *Current Science*, **100(2)**: 249-255.
40. Khan, M.A., Akhtar, M., Khan, A.M., **Ghaffar, A.**, Iqbal, M., and Samiullah, K. 2011. New fossil locality in the Middle Miocene of Lava from the Chinji Formation of the lower Siwaliks, Pakistan. *Pakistan Journal of Zoology*, **43(1)**: 61-72.
41. **Ghaffar, A.**, Khan, M. A. and Akhtar, M. 2010. Early Pliocene cervids (Artiodactyla- Mammalia) from the Siwaliks of Pakistan. *Journal of Earth Sciences, Turkey, Yerbilimleri*, **31(3)**: 217-231.
42. **Ghaffar, A.**, Abbas, S. F. 2010. An overview of past history based on seismicity pattern of Kashmir region, an interpretation from 2005 earthquake. *Journal of Animal and Plant Sciences*, **20(4)**: 297-304.
43. Khan, M.A., Iqbal, M. **Ghaffar, A.**, and Akhtar, M. 2009. *Proamphibos* (Bovini, Bovidae, Mammalia), from the Tatrot Formation in the Upper Siwaliks of Pakistan. *The Journal of Animal and Plant Sciences* **19(2)**: 104-107.

44. **Ghaffar, A.**, Khan, M.A and Akhtar, M. 2009. Predator-Prey relationship (Cervidae & Carnivora) and its impact on fossil preservation from the Siwaliks of Pakistan. *The Journal of Animal and Plant Sciences*, **19(1)**: 54-57.
45. Khan, M.A., Akhtar, M., **Ghaffar, A.**, Iqbal, M., Khan, A.M. and Farooq, U. 2008. Early Ruminants from Dhok Bin Mir Khatoon (Chakwal, Punjab, Pakistan): Systematics, Biostratigraphy and Paleoecology. *Pakistan Journal of Zoology*, **40(6)**, 457-463.
46. Khan, M.A., Iqbal, M., **Ghaffar, A.**, Khan, A.M. and Akhtar, M. 2008. Collection of *Selenoportax* from the Kundi Wala Kas, Hasnot, Pakistan. *Pakistan Journal of Zoology*, **40(4)**, 303-307.
47. Khan, M.A., **Ghaffar, A.**, Farooq, U. and Akhtar, M. 2007. New Fossil Remains of *Selenoportax vexillarius* from the Late Miocene of Hasnot. *Pakistan Journal of Zoology*, **39(5)**, 333-338.
48. Khan, M.A., **Ghaffar, A.**, Ali, Z., Farooq, U., Bhatti, Z.B. and Akhtar, M. 2005. Report on Mammalian Fossils of Chinji Formation, Dhulian, Pakistan. *American Journal of Applied Sciences*, **2(12)**, 1619-1628.

#### **Publications in HEC Recognized/ ISI Journals**

49. Khaliq, G. and **Ghaffar, A.** 2023. Geospatial Analysis of Reversal of Desertification in Cholistan desert of Bahawalpur city. *Sindh University Research Journal (SURJ)*, 55: 1-16. [Doi: https://doi.org/10.26692/surj-ss.v55i01.5885](https://doi.org/10.26692/surj-ss.v55i01.5885)
50. Haider, S., **Ghaffar, A.**, Hassan, M. A. and Cheema, S.B. 2017. Spatio-temporal Characteristics of an Unusual Wintertime Extratropical Weather System Causing Widespread Downpours over Pakistan. *Pakistan Journal of Meteorology*, **13(26)**: 37-50.
51. Samiullah, K., Akhtar, M., Khan, M. A. and **Ghaffar, A.** 2012; Fossil Mammals (Rhinocerotids, Giraffids, Bovids) from the Miocene Rocks of Dhok Bun Ameer Khatoon, District Chakwal, Punjab, Pakistan. *ARPJ Journal of Science and Technology*, **2 (Special Issue)**: 69-108.
52. **Ghaffar, A.**, Tariq, S. and Muhammad, G. 2011. The role of science education for combating and preventing diseases. *Science Vision*, **16-17**: 63-70.
53. Samiullah, K., Akhtar, M., **Ghaffar, A.** and Khan, M. A. 2011; *Giraffokeryx punjabiensis* (Artiodactyla, Ruminantia, Giraffidae) from Lower Siwaliks (Chinji

- Formation) of Dhok Bun Ameer Khatoon, Pakistan. *Journal of Science and Technology*, MSU, Thailand. **30(4)**: 62-76.
54. **Ghaffar, A.** 2010. GIS and Paleontology of Dhok Bun Ameer Khatoon fossil site, Pakistan. *Pakistan Journal of Science*, **62(3)**: 163-167.
  55. **Ghaffar, A.** and Akhtar, M. 2009. New fossil remains of *Dissopsalis cf. carnifex* pilgrim, 1910, from the Chinji Formation of Pakistan. *Journal of Himalayan Earth Science*, **42**: 37-43.
  56. Bhatti, Z.H., Qureshi, M.A., Khan, M.A., Akhtar, M., **Ghaffar, A.** and Ejaz, M. 2007. Fossil remains of the species *Giraffa Priscilla* (Mammalia, Giraffidae) from lower Siwaliks (Chinji Formation) of Pakistan. Proceedings of 5th geological Congress, National Geological Society of Pakistan. Pp. 273-284.
  57. Bhatti, Z.H., Qureshi, M.A., Khan, M.A., Akhtar, M., **Ghaffar, A.** and Ejaz, M. 2007. Individual variations in some premolars of species *Giraffokeryx punjabiensis* from lower Siwalik (Chinji Formation) of Pakistan. Proceedings of 5th geological Congress, National Geological Society of Pakistan. Pp. 261-272.
  58. Ahmed, Z., **Ghaffar, A.**, Khan, M.A. and Akhtar, M. 2006. The Taxonomic and stratigraphic evidences of *Hipparion antilopinum* from Dhok Pathan Formation (The Middle Siwaliks), Pakistan. *Biologia (Pakistan)*, **52(2)**, 139-148.
  59. Khan, M.A., **Ghaffar, A.**, Akhtar, M., Ali, Z., Farooq, U. and Bhatti, Z.H. 2006. Phylogeny and Cladogenesis analysis of Ruminants. *Biologia (Pakistan)*, **52(1)**, 43-56.
  60. **Ghaffar, A.**, Khan, M.A., Amara, U., Bhatti, Z.H., Nayyer, A.Q. and Akhtar, M., 2006. The Three toed horse "*Hipparion perimense*" (Mammalia, Perissodactyla, Equidae) from the Siwalik Hills of Pakistan. *Sci. Int. (Lahore)* **18(2)**, 157-160.
  61. Khan, M. A., **Ghaffar, A.**, Bhatti, Z.H. and Akhtar, M. 2006. The presence of extinct Mouse-Deer in the Dhulian village (Chinjian Strata), District Attock, Pakistan *Sci. Int. (Lahore)* **18(1)**, 53-55
  62. Khan, M.A., **Ghaffar, A.**, Farooq, U. and Akhtar, M. 2006. Ruminant fauna from the Tertiary Hills (Neogene) of the Siwaliks of Pakistan. *J. of Applied Sci.* **6(1)**: 131-137.
  63. **Ghaffar, A.**, Khan, M.A., Akhtar, M., Qureshi, M. A., Farooq, U. and Nazir, M. 2006. The oldest Cervid from the Siwalik Hills of Pakistan. *J. of Applied Sci.*, **6(1)**: 127-130.

64. **Ghaffar, A.**, Khan, M.A. and Akhtar, M.2005. Updated evidences of Siwalik Hipparion with special emphasis on Paleozoogeography and Biochronology. *Punjab Uni. J. Zool.*, **20(1)** 93-95.
65. Khan, M.A., **Ghaffar, A.**, Ali, Z., Farooq, U. and Akhtar, M. 2004. The comments on the possible origin of the Ruminants in Asia. *Geol.Bull Univ.***39**: 87-94.
66. Khan, M.A., Ali, Z., **Ghaffar, A.**, Farooq, U., Bhatti, Z. B. and Akhtar, M. 2004. Taphonomy and Paleoecology of the Hasnot (Middle Siwaliks), Potwar plateau, Northern Pakistan. *Geol.Bull Univ.***39**: 33-35.
67. **Ghaffar, A.**, Khan, M.A., Nazir, M. and Akhtar, M. 2004. New findings of Miocene Carnivora from the Kheller Kahar (Middle Siwaliks, Pakistan). *Sci. Int. (Lahore)* **16(4)**: 291- 293
68. **Ghaffar, A.**, Khan, M.A., Nazir, M. and Akhtar, M. 2004. Note on milk molars of *Hipparion theobaldi*. *Sci. Int. (Lahore)* **16(3)**: 227-229.
69. **Ghaffar, A.**, Khan, M.A., Nazir, M. and Akhtar, M., 2004. First record of *Martes lydekkeri* from Dhok Pathan Formation of Pakistan. *Punjab Univ. J. Zool.*, **19**:97-102.
70. **Ghaffar, A.**, Akhtar, M., Khan, M.A. and Nazir, M., 2004. Reprot on *Cervus sivalensis* from the Upper Siwaliks of Pakistan. *Punjab Univ. J. Zool.*, **19**: 83-88
71. **Ghaffar, A.** and Akhtar, M. 2004. A new addition to the Siwalik Carnivora from the Tertiary rocks of Pakistan. *Pak. J. Biol. Sci.*, **7(3)**: 328-330.
72. **Ghaffar, A.** Nayyaer, A.Q., Bhatti, Z.H., Akhtar, M., 2003. Critical analysis of Siwalik equids. *Sci. Int. (Lahore)*, **15(2)**: 177-178.
73. **Ghaffar, A.** Nayyer, A.Q., Bhatti, Z.H., Akhtar, M., 2003. The fossils *Equus* from Pinjor formation of Pakistan. *Sci. Int, (Lahore)*, **15(2)**: 179-181.
74. Akhtar, M., **Ghaffar, A.** and Qureshi, M.A., 1999. On *Cervus punjabiensis* Brown from the Siwalik Hills of Pakistan and Azad Kashmir. *Punjab Uni. J. Zool.*, **14**: 93-96

#### **Conference Presentations/ papers**

75. Ilyas, M., Fazal, R. M., Abbas, S. G., Faiz, Aftab, K., M., **Ghaffar, A.**, Samiullah, K. and Holbrook, L. 2026. Expanding the Fossil Record of Hippopotamodon (Suidae, Artiodactyla) from the Hasnot Area, Siwalik, Pakistan. April 28, 2026

76. **Ghaffar, A.** 2025. Two Days International Paleontology Seminar; 10 – 11 February, 2025- CUVAS, Bahawalpur.
77. **Ghaffar, A.** 2025. New interpretations of Family Hyaenidae based on the fossil records and phylogeny, Two days International 2nd Paleontological Conference on 3-4 February 2025, University of Okara.
78. **Ghaffar, A.** and Iqbal, S. 2024. Correlation of Sulaiman Range and Siwaliks Fossil Fauna of Pakistan. *The 95th Annual Meeting of the Paläontologische Gesellschaft (PalGes) Abstract book*, pp 41, 16-21 September 2024, University of Warsaw, Poland, [doi.org/10.4202/app.01209.2024](https://doi.org/10.4202/app.01209.2024)
79. **Ghaffar, A.** 2024. Assessment/Understanding of Desert Ecosystem through Animals. One Day Seminar, on March 01, 2024 at CUVAS, Bahawalpur
80. **Ghaffar, A.** 2024. Desertification based on Geohistorical Records with Reference to Cholistan Desert. International Workshop on “Droughts Over Pakistan in the Changing Climate” on 21-22 February 2024 with collaboration of PMD, Islamabad and IUB, Bahawalpur
81. **Ghaffar, A.** 2024. Use of Proxy indicators to understand the past Geological History. 3<sup>rd</sup> One Day International Conference on “New trends in Biological Sciences” on 13<sup>th</sup> January 2024 in collaboration of University of Okara with Times group of Colleges, Gujranwala.
82. **Ghaffar, A.** 2024. Understanding of Past environments based on the Mammalian Fossils from the Siwaliks of Pakistan. Two Days 2<sup>nd</sup> International Conference, January 09-10, 2024, Okara University, Okara, Pakistan
83. **Ghaffar, A.,** Waseem, M. T. and khan, A. M. 2023. Pleistocene Extinction event and its Palaeoecological impact on Cervidae fauna from the Siwaliks of Pakistan. MeDGU-23, 5<sup>th</sup> Euro- Mediterranean for Environmental integration: 02-05 October 2023, Rende (COSENZA), Italy.
84. **Ghaffar, A.** 2022: Fossil Record of Family Cervidae from the Siwaliks of Pakistan Two Days 1<sup>st</sup> International Conference, December 09-10, 2022, Okara University, Okara, Pakistan.
85. **Ghania, K. & Ghaffar, A.** 2022. Geospatial Analysis of Reversal of Desertification in Bahawalpur city of Cholistan Desert, 5<sup>th</sup> International Conference on Applied Zoology (ICAZ), 17-18 October 2022, Khawaja Fareed University of Engineering & Technology, Rahim Yar Khan, Punjab, Pakistan.

86. Waseem, M.T., Shehzad, M. I., Khan, A.M., **Ghaffar, A.** and Quade, J. 2022 (accepted): What is and What will be? The future of Climate through Climate Modelling: A study from Sub-Tropical Region (Pakistan). MedGU-22-P28: Mediterranean Geosciences Union: 27-30 November 2022, Marrakech, Morocco.
87. **Ghaffar, A.**, 2022: Progressive Trends and Future Prospects of Paleontology in Pakistan. Two Days International Seminar, January 28-29, 2022, Ghazi university, Dera Ghazi Khan, Pakistan
88. Waseem, M.T., Khan, A.M., Quade, J. and **Ghaffar, A.** 2021: Palaeoclimate and Dietary Niche of Family Cervidae from The Siwaliks (Pakistan): Does Coeval Occurrence of Species Leads to Niche Partitioning?. MeDGu-21, Mediterranean Geosciences Union: 25-28 November 2021, Istanbul, Turkey.
89. **Ghaffar, A.** and Khalid, B. 2016: Dengue spread in Pakistan, Facts and Factors responsible for the outbreak of this disease and its mitigation strategies. 33<sup>rd</sup> International Geographical Congress (IGC), August, 21-25, 2016, Beijing China.
90. **Ghaffar, A.** and Khalid, B. 2014: Relationship of Dengue with Malaria and other social and climate covariates from four different cities of Pakistan. 20<sup>th</sup> International Congress of Biometeorology (ICB), September, 28-October, 1, 2014, Ohio USA.
91. **Ghaffar, A.** 2014: Importance of Different Proxy Indicators to Infer Past Climate Change on Biodiversity Patterns from Siwaliks, Pakistan. Two Days 1<sup>st</sup> National Paleontology Seminar, December 4-5, 2014, GC University, Faisalabad.
92. **Ghaffar, A.** 2014: Dengue awareness and past extreme weather events during the last two decades in Pakistan. National Awareness Dengue Campaign, 20<sup>th</sup> September, 2014, University of the Punjab, Lahore, Pakistan.
93. **Ghaffar, A.** 2013: Fossil remains of family Cervidae from the Siwaliks of Pakistan. International Conference on Ruminant Phylogenetics (ICRPM13) from 3-6 September 2013, at Munich, Germany.
94. **Ghaffar, A.** 2014: Extreme Past events and Dengue spread in major cities of Pakistan. 13<sup>th</sup> CAS-TWAS-WMO Forum, International Symposium on Extreme Weather and Climate: Past, Present, Future, September 8-11, 2014, Beijing, China.
95. **Ghaffar, A.** 2013: Impact of Climate Change on Biodiversity Patterns from Late Miocene – Pliocene in Siwaliks, Pakistan. International Forum on Sustainability and Green, (IAP-PGBC), October 1-2, 2013, Islamabad, Pakistan.
96. **Ghaffar, A.** 2012. Comments on Paleobiogeography of Family Cervidae from the Sub-Himalayan Siwalik Group of Pakistan. 27th Himalaya-Karakoram-Tibet (HKT) Workshop 28-30 November 2012, Kathmandu, Nepal.

97. **Ghaffar, A.** 2012. Impact of Climate Change on Biodiversity Patterns of Different Mammalian Species of Potwar, Pakistan. CAS-TWAS-WMO Forum 11<sup>th</sup> International Workshop on Terrestrial Ecosystems under the Changing Climate 2-5 September 2012, Beijing China.
98. **Ghaffar, A.,** Tariq, S. and Muhammad, G. 2011. The role of science education for combating and preventing diseases. International Training Workshop on Science Education for sustainable Development, 27-28 June, Dhaka, Bangladesh. Abstracts, p. 19.
99. Aslam, S., K., Khan, A. M., Khan, M. A., **Ghaffar, A.,** Akhtar, M. and Samiullah, K. 2011. *Stegodon bombifrons* from the Pinjor stage, Soan Formation of Jari Kas, Azad Kashmir, Pakistan. Abstract, Pakistan Congress of Zoology, International, April 19-21, 2011 at University of AJ &K Muzaffarabad.
100. Iqbal, M.F., Lodhi, M.A.K., Butt, M.J., and **Ghaffar, A.** 2009. Land Cover Classification of Islamabad region using Remote Sensing of Landsat Spatial temporal images. Proceedings of 1<sup>st</sup> International Conference on Aerospace Science & Engineering [ICASE- August 18-20; 2009] Islamabad, Pakistan, pp. 259-266.
101. **Ghaffar, A.** 2009. Study of paleoenvironments based on mammalian fossil assemblages from the Siwaliks of Pakistan. BICMAPE Science Conference, July 28-29, 2009, CIIT, Abbottabad, Pakistan, pp. 25
102. Khan, M.A., Farooq, U., **Ghaffar, A.,** Khan, A.M., Akhtar, M., Illiopolous, G. and Shabbir, A. 2006. Presence of *Eotragus noyei* in the Middle Siwaliks, Pakistan. Canadian Paleontology Conference 2006. Proceeding No. 4. pp 23-25.
103. Khan, M.A., Illiopolous, G., **Ghaffar, A.** and Akhtar, M. 2005. Paleobiogeography of Siwaliks and Mediterranean Neogene Ruminants. 12th Congress R.C.M.N.S. 6-11 September 2005, Vienna, Austria.

### **Courses taught**

- (i) Zoogeography & Paleontology to BS students (CUVAS)
- (ii) Biogeography & Paleontology to BS students (CUVAS)
- (iii) Elements of Stratigraphy and Structural Geology to Ph. D students (CUVAS)
- (iv) Geography to BS students (CUVAS)
- (v) Research and Project Writing Skills to MS & PhD students (CUVAS)
- (vi) Biometeorology & Paleoclimatology to MS & PhD students (CUI)

- (vii) Climatology and Land Use Planning and Management to MS students (CUI)
- (viii) Elements of Earth Science & Cartography to MS students (CUI)
- (ix) Image Processing & Analysis to MS students (CUI)
- (x) Statistical analysis in Biology to BS students (CUI)
- (xi) Auxiliary Zoology to BS students of Clinical Psychology, PU
- (xii) Biology and Teaching of Biology to MSed. students at IER, PU

➤ **Initiative**

Started the subject of Biometeorology in the Department of Meteorology for the first time at MS & PhD level teaching and research. The field of Biometeorology in its broader context is associated with study of interactions between the physical environments and all forms of life including terrestrial and marine vertebrates and invertebrates, plants, Algae, Fungi, Bacteria and Viruses. I focused this study on the expansion of different diseases in animals and plants. Fifteen students completed their MS theses on different aspects of Biometeorology under my supervision while four are in progress. Similarly, one student has completed her PhD titled “Climate Change and Urbanization Impact on Dengue Fever Transmission in Different Cities of Pakistan” and two more are in progress to take the research for their PhD’s in this subject. Moreover, I also introduced the subject of Paleoclimatology at PhD level in this department for the first time as well.

## **Theses Supervised**

### **Ph. D**

- 1; Ms. Bushra Khalid (FA10-PME-001): Impact of Climate and Urbanization on Dengue Transmission in Different Regions (Lahore, Karachi and Twin Cities) of Pakistan (Completed; Dr. Bushra Khalid)
- 2; Mr. Muhammad Irfan Azeem (SP13-PME-002): Impact of Climate Change on Biodiversity Patterns for the Last 2000 Years
- 3; Mr. Safdar Iqbal (21-CUVAS-0010): Miocene Chronology of Sulaiman Range and its Relation to other Continental Deposits (Completed; Dr. Safdar Iqbal)
- 4; Mr. Muhammad Shahzad (21-CUVAS-0197): Family Equidae from the Sulaiman Range and its age correlation with Siwaliks of Pakistan

5; Mr. Muhammad Faizan (21-CUVAS-0202): Cervidae fauna, its origin, diversification on the basis of fossil records from Pakistan

6; Khadija Tul Kubra (24-CUVAS-0014): Identification of Candidate Polyphenols for Modulating Glucose Transporter Receptors and their effects on Growth, in Japanese Quail (In progress)

7; Umm e Ruman (20-CUVAS-0696) Geospatial Analysis for the Assessment of Wildlife in Desert Area of Cholistan, Punjab (In progress)

8: Mahreen Ahmad (20-CUVAS-0591): Reevaluation of Hipparionine Systematics from the Continental Deposits of Pakistan (In progress)

9: Ghania Khaliq (20-CUVAS-0691): Biodiversity and Risk Assessment in Flood Prone Areas of South Punjab (In progress)

#### **MS/M. Phil theses Supervision**

1. Mr. Farrakh Abbas Maken (FA05-RME-007): Seismicity of Kashmir Region Before & After 8<sup>th</sup> October 2005.
2. Mr. Muhammad Athar Haroon (FA06-RME-004): Relationship of Meteorological Parameters & Pollen Concentration in the Atmosphere of Islamabad.
3. Mr. Sajjad Haider (FA06-RME-013): Diagnostic Study of a Rain Spell in Winter Season from 16<sup>th</sup> to 21<sup>st</sup> December, 2008 over Pakistan
4. Mr. Muhammad Javid (FA07-RME-003): Impact of Global Warming on Monsoon in Pakistan.
5. Muhammad Zeeshan Javed (FA10-RME-008): Onset of Pest attack on Cotton Crop of Punjab in terms of Meteorological parameters.
6. Muhammad Arif (FA10-RME-003): Performance Evaluation of Convective Precipitation Schemes in RegCM4 over Diversified Climate of Pakistan.
7. Muhammad Ayaz (FA10-RME-004): An Analysis of Weather and Wheat Crop Development in Lower Sindh during the Period 2000-2010.
8. Muhammad Farooq (FA10-RME-010): Characteristics of Winter precipitation over Northern half of Pakistan during recent decades.

9. Mr. Abneer Anees (FA10-RRG-001): Assessment of Socio-economic Regime of Kashmir Earthquake using Geospatial Techniques.
10. Mr. Sajjad Haider (FA11-RME-013): Spatio-Temporal Analysis of Aridity over Pakistan for the period 1960-2011.
11. Mrs. Hira Khan (FA11-RRG-010): Geospatial Analysis of Deforestation in Swat, Khyber Pakhtunkhwa.
12. Mrs. Sadaf Shaheen (FA12-RRG-011): Forest Canopy Density Estimation from 1992-2012 Using Geospatial Techniques.
13. Mr. Nadeem Fareed (FA13-RRG-006): Spatio-Temporal Extension and Hotspot Analysis of Dengue from Rawalpindi, Islamabad and Swat during 2010-2014.
14. Mr. Muhammad Shahid Hussain (FA14-RRG-007): Impact Assessment of different weather parameters on road traffic accidents by Geo-Visualization Techniques in Rawalpindi
15. Mrs. Yasmeen Majeed (FA15-RRG-005): Spatial Vulnerability and Transmission Trends of Dengue in Faisalabad and Multan During 2011-2015
16. Mrs. Qurat ul Ain Younas (20-CUVAS-0664): Reversal of Cholistan Desert and its Impact on Socio-Economic uplift through Agriculture and Livestock of Bahawalpur
17. Mrs. Maryam Fatima (20-CUVAS-0665): Early Dispersal of Mammals in Cholistan Region
18. Mr. Muhammad Kamran Irshad (20-CUVAS-0683): Enamel Hypoplasia in Domestic and Grazing Cows of southern Punjab
19. Mrs. Ghania Khaliq (20-CUVAS-0691): Geospatial analyses of Reversal of Desertification in Bahawalpur city of Cholistan Desert
20. Mrs. Umm-e-Ruman (20-CUVAS-0696): Corona Trends in Bahawalpur City on the basis of Social and Climatic Covariates
21. Mr. Aqib Javed (20-CUVAS-0700): Enamel Hypoplasia in Domestic and Grazing Goats of southern Punjab
22. Mr. Naeem Raza (20-CUVAS-0707): Land Use Land Cover Changes and its Impact on Biodiversity (1990-2020) of Lal Suhanra National park
23. Ms. Sadia Imam (21-CUVAS-0150): Geospatial Analysis based on Agriculture and Livestock of Dera Gazi Khan

24. Ms. Javaria Safdar (21-CUVAS-0153): Geospatial Analysis based on Agriculture and Livestock of Rahim Yar Khan
25. Mr. Muhammad Usman Younis (21-CUVAS-0158): Geospatial Analysis based on Agriculture and Livestock of Lodhran
26. Mr. Kashif Ali (21-CUVAS-0165): The effects of dietary supplementation of selenium and vitamin e on growth performance and serum biochemical parameters in Japanese quails
27. Ms. Zubaida Bibi (21-CUVAS-0166): Geospatial Analysis based on Agriculture and Livestock of Multan
28. Ms. Hira Fatima (21-CUVAS-0167): Overview of Urbanization in Bahawalpur based on Proxy data to measure the Socio-economic Impacts
29. Ms. Asma Malik (21-CUVAS-0168): Impact of Climate Change and Urbanization on Wildlife of Cholistan Desert in Bahawalpur
30. Ms. Sana Haroon (21-CUVAS-0180): Dengue Surveillance during last Decade in Bahawalpur
31. Mr. Ameer Hamza (21-CUVAS-0188): Climate Change and Typhoid Incidence time Span in Bahawalpur city
32. Muhammad Junaid Shahid (22-CUVAS-0050) Identification of DNA Origins of Dog and Cat Species in Minced Meat of Sheep/Goat by Rapid Multiplex PCR
33. Ms. Hifza Asif (22-CUVAS-0055) Mapping and Monitoring of Malaria intensity based on GIS Analysis of Bahawalpur city During last 10 years
34. Mr. Madni Mahmood (22-CUVAS-0065). Climate Change and Dengue Incidence during last 10 years in Multan City
35. Ms. Mamona Ray (22-CUVAS-0072) Malaria Control Based on Hydrological and Geomorphological Parameters
36. Ms. Sadia Ghaffar Hashmi (22-CUVAS-0140): Development of an Efficient Multiplex PCR Assay for Discriminating DNA Origins between Duck and Chicken Species
37. Ms. Saima Sharif (2019-CU-ZOOL-161): Rapid Multiplex PCR For Identification of DNA Origins of Soybean and Fish Species in Food Products
38. Ms. Ayesha Riaz (2019-CU-ZOOL-039) Comparative Analysis of Past and Current Distribution Ranges of *Vulpes Vulpes* in Bahawalpur District

39. Ms. Dur-E- Adan Fatima (2019-CU-ZOOL-055): Current Population Status of *Bubalus Bubalis* in Cholistan Desert of Bahawalpur
40. Mr. Muhammad Nadeem (2019-CU-ZOOL-065): Comparison of Enamel Hypoplasia in Domestic and Grazing Cattles in Muzaffargarh Area
41. Ms. Mahreen Ahmad (20-CUVAS-0591): Phylogenetic Analysis and Current Distribution of *Hyaena hyaena*
42. Rubbia Waheed (24-CUVAS-0061): Sequence Analysis and Functional Mutation of HSP Gene Families in the Rahu (*Labeo Rohita*)
43. Sadia Batool (24-CUVAS-0083): Potential Effects of Tribulus Terrestris Extract on Reproduction of Goat
44. Dua Ali (20-CUVAS-0555): Exploring Tribulus Terrestris Effect on Semen Quality and Potential Toxicity in Male Dogs
45. Saba Mehmood (24-CUVAS-0069): Retrospective Analysis of Drought in Cholistan and cope strategies among herder
46. Ureeba Shafiq (23-CUVAS-0356): Comparative Growth of *Oreochromis niloticus* related to Physico-Chemical Parameters and Feeding Behavior in Bahawalpur, Lodhran and Muzaffargarh

### **Projects Completed**

- 1: Vertebrate Evolution, Biogeographic Relationships and Paleoenvironments of the Siwaliks of Pakistan (Funding Agency HEC; .862M as PI)
- 2: Pliocene (5.3-1.6Ma) mammalian fauna from the Siwaliks of Pakistan (Funding Agency HEC; 2.4M as PI)

### **Submitted**

- 1: Changing Climate based on Destiny of the Mammalian Species from the Siwalik of Pakistan; to infer Future Climate of the Region (Funding Agency HEC; 11.2M as PI)
- 2: Smart Health Intelligence & Early-Alert for Local Disease Surveillance (Funding Agency HRI; 8.25M as CO-PI)
- 3: The Assessment of Wind Erosion and its Land Degradation Neutral Research Framework in Cholistan Desert (Funding Agency PSD-NCSF; 8.6M as PI)

4: The Role of Climatic and Vegetational Change in Late Quaternary Faunal Crisis in the Siwaliks of Pakistan: Implications for the Future (Funding Agency HEC; 19.4M as CO-PI)

5: Appraisal of Geo-Climatic Evidence for Conservation of Natural Resources: A Framework for 1st Fossil Park/1st Global Geopark and 3<sup>rd</sup> Man and Biosphere Reserve of Pakistan under UNESCO ((Funding Agency HEC; 225M as CO-PI).

6: Interrelationship of Mammalian Fauna of Sulaiman Range and Siwaliks of Pakistan (Funding Agency HEC; 11.6M as PI)

### **HEC approved PhD supervisor**

For Indigenous scholarship program funded under various HEC scholarship programs

### **Projects evaluated**

**(Pakistan-U.S. Science and Technology Cooperative Program and HEC: NRPU)**

1: The Siwalik Proboscideans from Northern Pakistan

2: A better understanding of the renewable groundwater resources of the Pishin Lora Basin, Pakistan

3: Understanding environmental effects and controlling Cr contamination in Pakistan

4: Investigation of indigenous material for the simultaneous removal of Arsenic and microbial contaminants from drinking water in rural Pakistan

5: Mass awareness for water resources, Energy, Conservation and Solar energy in Pakistan

6: Evaluation of different Remote Sensing Techniques for Drought study in Pakistan

7: Capacity Building for Integrated Satellite and ground-based study of Atmospheric Brown Cloud (ABC) over Pakistan and their Impacts on regional Climate

8: Development and Implementation of an Open-Source Extreme Rainfall and Flood Monitoring System for Real Time Alerts and Emergency Management Activities

### **PhD theses Evaluated**

Muhammad Akbar Khan (PhD-94-f-147) 2007: Taxonomic Studies of Fossil Remains of Ruminants from Tertiary Hills of Hasnot, Pakistan

Muhammad Khaled Siddiq Ch. (PhD-83-i-48) 2015: Taxonomic Studies of Mammalian Remains from the Siwalik Hills of Sardhok, Punjab, Pakistan

Ms. Amtur Rafah (PhD- ZP12-06) 2020: Systematics and Biogeography of the Middle Miocene Siwalik Mammals of Pakistan

Ms. Ayesha Iqbal 2020 (PhD-2004-udz-50) 2020: Systematic Paleontology and Paleobiogeography of the upper Siwalik Mammals of Pakistan

Muhammad Tahir Waseem (PhD-UZ01-F17) 2020: Effect of Palaeoclimatic and Vegetational Change on the Mammalian Communities of the Siwaliks of Pakistan

Rana Manzoor Ahmad (PhD-2004-i-10) 2020: Comparative Analysis of Enamel Hypoplasia in the Siwalik Artiodactyles of Pakistan

Nadeem Munawar (Reg: 09-arid-389) 2021: Damage Assessment and Control of Rodents in Agro-Ecosystem of Pothwar Plateau, Pakistan

Muhammad Asim (PhD- ZP13-04) 2021 New remains of Middle Miocene Artiodactyles from Chakwal, Punjab, Pakistan.

Muhammad Khalil Nawaz (PhD-2005-jm-5) 2021: New Remains of Mammals from Chabbar Syedan Chinji Formation of Jhelum, Pakistan

Muazzam Ali Khan (Reg: 09-arid-389) 2021: Systematics of Family Lacertidae in Pakistan, PMUUR

Ms. Fatima Yousaf Dar (PhD- ZP14-09) 2022: New Fossil remains from Pinjor Formation, Pir Panjan Shah, Pabbi Hills, Gujrat, Punjab, Pakistan.

Mr. Khalid Mehmood (PhD- UDZ2009-12) 2023: Carnivora from Siwaliks of Northern Pakistan: Palaeontology and Taxonomy

Ms. Asra Ghaus (PhD- UDZ2009-10) 2023. New Mammalian Fossils from Chinji Formation (Siwalik Group) of Kanhatti, Chakwal, Punjab, Pakistan

Mr. Zaman Gul (PhD- ZP15-19) 2024. Dental Defects in the Mio-Pleistocene and Recent Perissodactyls from Pakistan

Ms. Aalia Tabsum (PhD- ZPI17-18) 2025. Middle Siwalik Perissodactyls from Pakistan: Systematics and Palaeodietary Analysis

Ms. Mariam Zaheer (PhD- ZPI17-13) 2025. Taxonomy and Dietary Evaluation of Middle Siwalik Bovids from Jhelum, Punjab, Pakistan

### **Paper reviewed**

- 2026: The restorative effect of titanium dioxide nanoparticles synthesized with *Origanum vulgare*, carvacrol, *Hypericum perforatum*, and hypericin loaded in calcium alginate scaffold on *Staphylococcus aureus*-infected ulcers in diabetic rats. *The JAPS*
- 2025: New data on *Merycopotamus nanus* (Anthracotheriidae) from the Chinji Formation (Middle Miocene) of Kanhatti, Khushab, Punjab, Pakistan, (*Paläontologische Zeitschrift* (PalZ))
- 2025: The Suidae Fossils from The Late Miocene Deposits of Hasnot and Padhri, Jhelum, Punjab, Pakistan. *Revista Brasileira de Paleontologia*
- 2025: Late Miocene hipparionin fossils from the Dhok Pathan Formation of Pakistan: palaeoenvironmental implications. *Historical Biology*
- 2025: A Collection of Hipparionines from the Middle Siwaliks (Late Miocene) of Pakistan. *South Asian Journal of Zoology*
- 2025: Book on the Fossil Collections by Manzoor et al, 2025
- 2025: New bovid fossils from the Dhok Pathan, Middle Siwalik of Pakistan. *PalZ*
- 2025: *Listriodon Pentapotamiae* from the Dhok Bun Ameer Khatoon, Siwaliks, Pakistan. *Geological Journal*
- 2025: Unveiling the Late Miocene Mammalian remains from the outcrops of Chakwal, Punjab, Pakistan. *Geological Journal*
- 2023: New fossil remains of Bovids from the middle Siwaliks of Punjab, Pakistan. *Historical Biology*
- 2023: Organophosphate Pesticides in Groundwater of Pakistan: A Review: Pollution. *The Nucleus*.
- 2023: Morphometry, food and feeding habits of *Eutropiichthys vacha* from the Indus River, Punjab, Pakistan. *The JAPS*
- 2022: Fossil Proboscideans and their evolutionary history from the Siwalik Group of Pakistan. *Historical Biology*
- 2022: Middle Miocene Giraffa from the Chinji Formation of Siwaliks, Pakistan. *Palaeoworld*.
- 2022: New collection of fossils remains of Pigs (Mammalia: Artiodactyla: Suidae) from the Siwaliks of Pakistan. *Historical Biology*

- 2022: Impact of yeast (*Saccharomyces cerevisiae*) on the growth performance, hemato-biochemical, physiological parameters and digestive enzymes activity of GIFT Tilapia (*Oreochromis mossambicus*). *Plos One*
- 2022: An anti-tick vaccine based on hybridomal cement cone protein assessed as a source of potential antigen for *Boophilus microplus* and *Hylomma dromadrai* infesting domestic camels. *Applied Animal Science*
- 2022: Population and Risk Assessment of Sympatric Pheasant Species in Palas Valley, Pakistan: Pheasant of Palas Valley, Pakistan. *Brazilian Journal of Biology*
- 2021: Equus sivalensis from the Pabbi Hills Pleistocene of Pakistan. *Geological Journal*
- 2021: A supplementary report of the Pleistocene bovids from the Pabbi Hills of Pakistan. *Geological Journal*
- 2021: Mesowear analysis and the paleodiets of Middle Miocene mammals from Chabbar Syedan, Punjab, Pakistan. *JAPS*
- 2021: New Mammalian Remains from the Middle Miocene of Bhilomar Punjab, Pakistan. *Pakistan Journal of Scientific and Industrial Research (PJSIR)*
- 2021: The new discovery of Giraffokeryx skull and associated fossil assemblage of Ruminants from the Middle Miocene deposits of the Siwaliks, *Historical Biology*
- 2021: Phylogenetic status and diet of red fox (*Vulpes vulpes griffithii*) inhabiting Ayubia National Park, Pakistan: Phylogeny and diet of red fox in Pakistan, *Brazilian Journal of Biology*
- 2020: Appraisal of Dental Enamel Hypoplasia in the Middle Miocene Deinotheridae: Implications of the Siwalik Paleoenvironments of Pakistan, *Revista Brasileira de Paleontologia*
- 2020: "Were Late Gomphotheres (Plio-Pleistocene) of the Siwaliks at more Stress as Compared to Early Gomphotheres (Middle to Late Miocene)?" *Journal of Bioresource Management*

### **Conference Papers (Reviewed)**

- 2021: Geochemical transformation of water bodies in urban environment under contemporary surface sedimentation occurring in the catchment, MedGU-21
- 2021: Spatial distribution of carnivores and Human-Wildlife Conflict and Co-existence in Pakistan, MedGU-21

- 2021: Spatio-temporal dynamics of Dengue, Chikungunya, and Zika Viruses in Mexico: A potential co-circulation problem, MedGU-21
- 2020: The Microbial and Physicochemical Analysis and Treatment of Groundwater of South Punjab, Pakistan. Proceeding of the First International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climates