

SHUMAILA NAZ

Assistant Professor

Department of Biological Sciences,

National University of Medical Sciences, Rawalpindi, Pakistan

Mobile: +92-3325276926

e-mail: shumaila.naz@numspak.edu.pk

<https://scholar.google.com/citations?user=3xkuuOYAAAAJ&hl=en>

RESEARCH INTEREST

My research priorities cover the following areas:

- Understanding of aberrant inflammatory and immunological responses of the host against parasites
- Ecology, evolution, and clinical aspects of parasites, including the host immune response
- Characterization of recombinant proteins and development of immuno-diagnostics for infectious diseases
- Studying host-parasite interaction and immunological pathways in diseases pathogenesis
- Molecular epidemiology of human and veterinary parasitic diseases
- Importance of Vectors and Vector-borne diseases in humans and animals
- Zoonotic diseases of public health importance especially neglected tropical diseases

ACADEMIC QUALIFICATIONS

Ph. D (Molecular Parasitology and Immunology)

2015

PMAS-Arid Agriculture University Rawalpindi, Pakistan

University of the Sunshine Coast, Australia

Mentor: Dr. Farhana Riaz Ch./Dr. Shelley Walton

Ph.D. Dissertation: "Molecular Characterization of scabies mite (*Sarcoptes scabiei* var. *hominis*) in Pakistan."

M. Phil Zoology

Gold Medal

2010

PMAS Arid Agriculture University Rawalpindi, Pakistan

M. Phil Dissertation: Diagnosis of scabies in local human population based on PCR and DNA Fingerprinting.

M. Sc Zoology

First Division

2008

PMAS Arid Agriculture University Rawalpindi, Pakistan

B. Sc. (Bot, Zool, Chem) University of the Punjab, Lahore, Pakistan	First Division	2006
F.Sc. (Pre-Medical) F. G. Post Graduate College for Women, Kashmir Road, Rawalpindi	First Division	2004
Matric (Science) F.G. Girls Secondary School, Abid Majeed Road, Rawalpindi	First Division	2002

WORK EXPERIENCE

1. **Assistant Professor** (April 2017-Present)
Assistant Professor at National University of Medical Sciences, Department of Biological Sciences, Rawalpindi, Pakistan.
2. **Visiting Research Scholar** (Feb 2014-Dec 2014)
Visiting research scholar with the Allergy Immuno-biology Mite Laboratory at the University of the Sunshine Coast, Queensland, Australia.
3. **Researcher** (Jan 2013- Jan 2014)
Worked as research scholar at Institute of Biomedical and Genetic Engineering (IBGE).
4. **Research Scholar** (July 2009-Dec2012)
Worked as research scholar at PMAS Arid Agriculture University, Rawalpindi.

RESEARCH PUBLICATIONS

1. **Shumaila Naz**, Aiman Aroosh, Naeem Raza, Arshad Islam, Yusuf Ozbel, Seray Toz, Haroon Ahmed, Shahid Waseem. 2022. Multiparametric Approach to Assess the Disease Severity and Progression of Cutaneous Leishmaniasis Infection. Acta tropica. <https://doi.org/10.1016/j.actatropica.2022.106659>
2. Muhammad Numan, **Shumaila Naz**, Rehama Gilani, Azhar Minhas, Haroon Ahmed and Jianping Cao. 2022. Evaluation of Household Preparedness and Risk Factors for Cutaneous Leishmaniasis (CL) Using the Community Assessment for Public Health Emergency Response (CASPER) Method in Pakistan. International Journal of Environmental Research and Public Health. 19(9), 5068; <https://www.mdpi.com/1660-4601/19/9/5068/htm>
3. Ayesha Tahir, **Shumaila Naz**, Muhammad Sohail Afzal, Rana Muhammad Kamran Shabbir, Haroon Ahmed. 2022. Community based assessment of Knowledge, Attitude and

Practices (KAP), Risk factors and One Health Perspectives of Brucellosis in rural and urban settings of Pakistan. Journal of the Hellenic Veterinary Medical Society. 73 (3).

4. Huma Shehwana, Sadaf Ijaz, Areeba Fatima, Shelley Walton, Zafar Iqbal Sheikh, Waseem Haider, and **Shumaila Naz***. 2021. Transcriptome analysis of host inflammatory responses to the ectoparasitic mite *Sarcoptes scabiei* var. *hominis*. Frontiers in immunology. <https://www.frontiersin.org/articles/10.3389/fimmu.2021.778840/full>.
5. Tooba Maqsood, Khuram Shahzad, **Shumaila Naz**, Sami Simsek, Muhammad Sohail Afzal, Shahzad Ali, Haroon Ahmed, Jianping Cao. 2021. A cross-sectional study on the association between risk factors of toxoplasmosis and One health knowledge in Pakistan. Frontiers in Veterinary Science. <https://www.frontiersin.org/articles/10.3389/fvets.2021.751130/full>
6. **Shumaila Naz**, Sajjad Ahmad, Sumra Wajid Abbasi, Saba Ismail, Shahid Waseem, Muhammad Tahir ul Qamar, Ahmad Almatroudi, Zain Ali. 2021. Identification of immunodominant epitopes in allelic variants VK210 and VK247 of *Plasmodium vivax* Circumsporozoite immunogen. Infection, Genetics and Evolution. 96 (105-120). ISSN 1567-1348. <https://www.sciencedirect.com/science/article/pii/S1567134821004202>.
7. Aisha Khan, Haroon Ahmed, Shaheera Amjad, Muhammad Sohail Afzal, Waseem Haider, Sami Simsek, Mudassar Rashid Khawaja, Danish Hassan Khan, **Shumaila Naz**, Anna Durrance-Bagale, Rana Muhammad Kamran Shabbir, Raja Zoq Ul Arfeen, Jianping Cao. 2021. Community-Based Assessment of Behavior and Awareness of Risk Factors of Cystic Echinococcosis in Major Cities of Pakistan: A One Health Perspective. Front. Public Health 9:648900. <https://www.frontiersin.org/articles/10.3389/fpubh.2021.648900/full>.
8. Zainab Bibi, Anam Fatima, Rehana Rani, Ayesha Maqbool, Samea Khan, **Shumaila Naz*** & Shahid Waseem. 2021. Genetic characterization of *Plasmodium vivax* isolates from Pakistan using circumsporozoite protein (*pvcsp*) and merozoite surface protein-1 (*pvmssp-1*) genes as genetic markers. Malaria Journal. 20:112. <https://malariajournal.biomedcentral.com/articles/10.1186/s12936-021-03654-w>
9. Aisha Khan, Rawan Sajid, Shaista Gul, Ashiq Hussain, Mohammad Tahir Zehri, **Shumaila Naz**, Sami Simsek, Shahid Waseem, Muhammad Sohail Afzal, Syed Kamran Ul Hassan Naqvi, Muhammad Qasim, Haroon Ahmed. 2020. [Epidemiological and Pathological Characteristics of Cutaneous Leishmaniasis from Baluchistan Province of Pakistan](https://pubmed.ncbi.nlm.nih.gov/33353570/). Parasitology. 1-28. <https://pubmed.ncbi.nlm.nih.gov/33353570/>.
10. Syed Babar Jamal, **Shumaila Naz**, Raees Khan, Adnan Haider, Rabail Zehra Raza, Sumra Wajid Abbasi. 2020. [Computational Methods in Road towards Drug Discovery against SARS-CoV2](#). Life and Science. 1(Supplement issue).

<http://lifescience.org/2020/12/04/computational-methods-in-road-towards-drug-discovery-against-sars-cov2/>

11. Raees Khan, **Shumaila Naz**, Fawad Muhammad, Syed Babar Jamal, Sumra Wajid Abbasi, Rabail Zehra Raza. 2020. [Mildly Infected and Presumed Asymptomatic Carriers of SARS-CoV-2; Implications in Spread and Control of COVID-19](#). Life and Science. 1(Supplement issue). <http://13.67.75.196/index.php/life-and-science/article/view/146>
12. Shamaila Irum, Malik Aftab, Aisha Khan, **Shumaila Naz**, Sami Simsek, Ayesha Habib, Muhammad Sohail Afzal, Muhammad Arif Nadeem, Muhammad Qasim, Haroon Ahmed. 2020. [Cutaneous Leishmaniasis \(CL\): A Cross-Sectional Community Based Survey on Knowledge, Attitude and Practices in a Highly Endemic Area of Waziristan \(KPK Province\), Pakistan](#). Acta Tropica. 213, 105746. <https://pubmed.ncbi.nlm.nih.gov/33160955/>
13. **Shumaila Naz**, Sajjad Ahmad, Shelley Walton, and Sumra Wajid Abbasi. 2020. Multi-epitope based vaccine design against *Sarcoptes scabiei* paramyosin using immunoinformatics approach. Journal of Molecular Liquids: 114105. <https://www.sciencedirect.com/science/article/abs/pii/S0167732220336783>
14. **Shumaila Naz**, Farhana Riaz Chaudhry, Dilawar Abbas Rizvi, Muhammad Ismail. 2020. [Phylogenetic Analysis of Astigmatid Mites *Sarcoptes scabiei* and *Dermatophagoides farinae* using ITS-2 as a Genetic Marker](#). Life and Science. 1(2): 5-5. <http://doi.org/10.37185/LnS.1.1.75>
15. **Shumaila Naz**, Farhana Riaz Chaudhry, Dilawar Abbas Rizvi and Muhammad Ismail. 2018. Genetic characterization of *Sarcoptes scabiei* var. *hominis* from scabies patients in Pakistan. Tropical Biomedicine. 35(3) 796–803. <https://pubmed.ncbi.nlm.nih.gov/33601766/>.
16. Farhana Riaz Chaudhry, Khalid Hameed, **Shumaila Naz**, Dilwar Abbas Rizvi, Annaritamolar Min Paolotizzani and Luca Rossi. 2018. Scabies Prevalence and Risk Factors in Pakistan: A Hospital Based Survey. Biomed J Sci & Tech Res. 2(2): 1-5. <https://biomedres.us/pdfs/BJSTR.MS.ID.000726.pdf>
17. **Shumaila Naz**, M. Desclozeaux, K. Mounsey, F. R. Chaudhry and S. Walton. 2017. Characterization of *Sarcoptes scabiei* Tropomyosin and Paramyosin: Immunoreactive Allergens in scabies. American Journal of Tropical Medicine and Hygiene, 97(3):851-860. <https://pubmed.ncbi.nlm.nih.gov/28722633/>.

18. **Shumaila Naz**, D. A. Rizvi, A. Javaid, M. Ismail, F. R. Chaudhry. 2013. Validation of PCR Assay for Identification of *Sarcoptes scabiei* var. *hominis*. Iranian Journal of Parasitology, 8(3):437-440. <https://pubmed.ncbi.nlm.nih.gov/24454438/>

RESEARCH GRANTS

Project Title	PI/Co.PI	Amount	Funding Agency	Duration
A New and Combined Approach for The Diagnosis of Cutaneous Leishmaniasis, A Neglected Vector-Borne Disease	PI	3.57 Million	PSF-TUBITAK	2019-ongoing
Transcriptome analysis of the host immune responses to skin infestation with the ectoparasitic mite <i>Sarcoptes scabiei</i>	PI	0.5 Million	Higher Education Commission	2017-2019
A New and Combined Approach for The Diagnosis of Cutaneous Leishmaniasis, A Neglected Vector-Borne Disease	PI	0.3 Million	NUMS	2021-ongoing

AWARDS AND DISTINCTIONS

1. Travel Grant for visit to **Ege University, Izmir, Turkey** in a bilateral project funded by PSF-TUBITAK (29th May to 4th June 2022).
2. Travel Grant for **Wellcome Genome Campus Advanced Course Next Generation Sequencing Bioinformatics (Bandar Sunway, Malaysia)** from Wellcome Genome Campus, UK (07 to 15 Feb, 2020).
3. Indigenous PhD Scholarship (2012-2016) from Higher Education Commission.
4. International Research Support Initiative Program (IRSIP) Scholarship from Higher Education Commission. Worked as visiting scholar at University of the Sunshine Coast, Australia for a year during 2014.

5. Gold Medal: Department of Zoology, Arid PMAS- Agriculture University Rawalpindi (2010).
6. V.C. Talent Scholarship: M.Phil. (Zoology) (2009). Department of Zoology, PMAS-Arid Agriculture University Rawalpindi
7. Scholarship Middle Standard Examination (2000).

ORAL PRESENTATION

- Invited Speaker and participant at **NIPD-TDR-WSH workshop on multisectoral approaches to the prevention and control of vector-borne diseases, with a focus on the WASH sector** held 7–10 June 2021, Virtual.
- “Detection of *Sarcoptes scabiei* var. *hominis* causing Scabies in Local Human Population Based on PCR and DNA Fingerprinting” in **31st Zoological Conference on 9-12 April, 2011** held in University of Azad Jammu and Kashmir, Muzaffarabad. (CBGP-77, Page 45).

CERTIFICATE COURSES

- Training course **Introduction to the Principles and Practice of Clinical Research (IPPCR)** by NIH, USA.
- Training course **Principles of Clinical Pharmacology** by NIH, USA.

SCIENTIFIC SKILLS

- Culturing of Leishmania parasite
- RNA extraction and purification from skin and pathogens
- Blood and serum samples handling
- DNA extraction and genotyping/molecular characterization through conventional and modern molecular techniques
- Recombinant DNA technology: Gene cloning, expression, and purification
- Western Blotting
- ELISA (Enzyme Linked Immunosorbent Assay) development
- Expertise in using statistical software *i.e.* GraphPad Prism
- Expertise in various Bioinformatic tools.

AMINISTRATIVE AND PROFESSIONAL EXPERIANCE

- Convenor of University Art and Media Society since 2022
- Member of Department Quality Assurance Committee since 2020
- Membership in ‘International Alliance for control of scabies’ since January 2015

WORKSHOP ORGANIZED

- Organized a two-day International **Hands-on Workshop on Identification of Sandfly and Diagnosis of Cutaneous Leishmaniasis** in collaboration with Ege University, Turkey on 25th – 26th January 2022 at NUMS.

SEMINARS/WORKSHOPS/CONFERENCES PARTICIPATED

- Invited Speaker and participant at **NIPD-TDR-WSH workshop on multisectoral approaches to the prevention and control of vector-borne diseases, with a focus on the WASH sector** held 7–10 June 2021, Virtual.
- Participated in **Wellcome Genome Campus Advanced Course Next Generation Sequencing Bioinformatics (Bandar Sunway, Malaysia) VIRTUAL** held online from 1-5 February 2021.
- Participated in the two days training organized on **Scientific paper and patent writing by Islamic World Educational, Scientific and Cultural Organization (ICESCO)** held online on 14-15th Dec 2020.
- Participated in 4 days' workshop on **Molecular Diagnosis and Pathogen Determination Techniques for Emerging and Re-emerging infectious diseases by China CDC (China CDC ModPad)** held on 1st to 4th July 2019 at National Institute of Health (NIH), Islamabad
- Participated in seminar on **Academic Institutions to formulate joint mechanism to counter narcotics and drug abuse** held on 20th June 2019 at Anti-Narcotics Force Academy (ANFA).
- Participated in workshop on **Curriculum Orientation Workshop on Zoology** held on 22nd to 24th April 2019 at Lahore College for Women University (LCWU).
- Participated in workshop on **Curriculum Development – A six step Approach** held on 13th to 18th Sep, 2018 at National University of Medical Sciences (NUMS).
- Participated in seminar on **Medical Journalism in Pakistan** on held 16th Aug, 2018 at National University of Medical Sciences (NUMS).
- Participated in workshop on **Quality assurance in written assessment** held on 3rd and 17th March, 2018.
- Participated in 2-days **Qualitative research workshop** held on 26th-27th Feb, 2018 at National University of Medical Sciences (NUMS).
- Participated in workshop on **Office Management & Procedures** held on 16th - 18th January 2018 at National University of Medical Sciences (NUMS).
- Participated in **Hand on workshop on flow cytometry** held on 25th to 26th October, 2017 at Alpha Genomics (Pvt.) Ltd.
- Facilitated and Participated **NIH-IPPCR interactive course** 5th October 2017 to 12th April, 2018.

- Organized a symposium on antibiotic awareness collaboratively with NUMS biogenetics faculty entitled **Seek Advice: think twice** on 17th November, 2017.
- Participated a hands-on training workshop on **Next generation sequencing data analysis** during 21st-23rd August 2017 at CIIT Islamabad
- Participated in **Workshop on research ethics** held at National University of Medical Sciences (NUMS) on Aug 16-17th, 2017.
- Participated in **Clinical Research** held at National University of Medical Sciences (NUMS) on May 8-10th, 2017.
- Participated in **Research week** held at University of the Sunshine Coast, Australia on July 13-16th, 2014.
- Participated in **SPSS workshop** held at Gen. KRL Hospital, Islamabad on January, 22nd 2014.
- Participated in **11th Biennial Conference Molecular Biosciences – Challenges and Opportunities** held at The University of Punjab Lahore on November, 25-28th 2013.
- Participated in **National Science Conference** held at PMAS Arid Agriculture University Rawalpindi from, January, 10th -12th, 2012.
- Participated in National conference on **Trends in Biochemistry and Molecular Biology** held at Dept. of Biochemistry Quaid e Azam University Islamabad on 21st Feb, 2012.
- Participated in International Workshop on **Bioinformatics: Database Mining and High throughput Genomic Analyses** held at COMSTECH, Islamabad, Pakistan from, March 19-21, 2012.
- Participated in **Training Workshop on Real Time PCR** held at Dept. of Biochemistry PMAS AAUR from, Sep, 4th-7th, 2012.

COURSES TAUGHT

Course Title	Credit Hours	BS./MS.
Advances in Immunology	3(3+0)	MS.
Biochemistry II	3(2+1)	BS.
Anatomy and Physiology I	3(2+1)	BS.
Anatomy and Physiology II	3(2+1)	BS.
Immunology I	3(3+0)	BS.

MS. STUDENTS SUPERVISED

<u>Degree</u>	<u>Supervised/Co-supervised</u>	<u>Under supervision</u>
MS	6	1

REFERENCES

1. Prof. Dr. Aisha Mohyuddin

Director Research and Head of Department of Biological Sciences,
National University of Medical Sciences, Rawalpindi.

Tel: +92-51-9270676 Ext 211

E-mail: aisha.mohyuddin@numspak.edu.pk

2. Associate Professor Dr. Jawad Hassan

Department of Biological Sciences,
National University of Medical Sciences, Rawalpindi.

E-mail: jawad.hassan@numspak.edu.pk