

# Dr. Hira Bashir

Assistant Professor

Dept. of Botany

Women University Mardan

Address: Current Address: 30-G, Muslim Block, Allama Iqbal Town, Lahore.  
Email Address: [hira.b21@hotmail.com](mailto:hira.b21@hotmail.com)  
[hirabashir333@gmail.com](mailto:hirabashir333@gmail.com)

## RESUME

To pursue a progressive career in an institution that provides opportunities for both professional and personal growth and develop skills to expand the institution's performance keeping in view the past experiences.

### **CAREER OBJECTIVE:**

#### **Ph.D. Botany**

2014 - 2019

University of the Punjab, Lahore, Pakistan

Research was done in Fungal Biology and Systematics laboratory, Department of Botany, University of the Punjab, Lahore.

Underwent a six months internship in the Research unit MycSA of the INRAE, Center Nouvelle-Aquitaine-Bordeaux, France, from September 2017 to March 2018. Research based on Fungal Biotechnology techniques and recent phylogenetic analyses to study evolution of a taxon (plant or fungal).

**MAJOR SUBJECTS:** Water resources and their management in Pakistan, Horticulture-II, Advanced Phytosociology, Molecular biodiversity and DNA analysis.

#### **M. Phil Botany**

2011 - 2013

University of the Punjab, Lahore, Pakistan

**MAJOR SUBJECTS:** Ectomycorrhizae in Forestry, Transformation & Lateral DNA Transfer, Tissue Culture Techniques, Soil/Environmental Science, Ecology of Halophytes, Horticulture-I.

#### **M.Sc. Botany**

2007 - 2009

University of the Punjab, Lahore, Pakistan

**MAJOR SUBJECTS:** Cell & Molecular Biology, Plant Biochemistry (Structure & Catalysis, Bioenergetics & Metabolism), Autecology & Synecology, Mycology (Lower & Higher Fungi), Evolutionary Biology (Vascular Cryptogams & Spermatophytes).

#### **B.Sc. (Major Subjects: Botany, Zoology & Chemistry)**

2005 - 2007

University of the Punjab, Lahore, Pakistan

### **MAJOR ACCOMPLISHMENTS:**

Research Thesis in M.Sc.: Topic: **Comparative Study of the Internal Structure of Wood of Few Members of Caesalpinioideae Lindl., & Mimosoideae Lindl.**

Research Thesis in M. Phil: Topic: **Morpho-anatomical and molecular characterization of *Eucalyptus* associated ectomycorrhizal fungi in some areas of the Punjab Province, Pakistan.**

Research Thesis in PhD: **Systematic Diversity and Culturability Assessment of *Agaricus* spp. From Khyber Pakhtunkhwa and Punjab, Pakistan.**

### **PUBLISHED PAPERS:**

HEC approved supervisor.

### **ACADEMIC CREDENTIALS:**

- 1) **Bashir, H., & Khalid, A. N.** (2015). Morpho-anatomical and molecular characterisation of

ectomycorrhizae associated with *Eucalyptus* species growing in different areas of the Punjab Province, Pakistan. *Australian Journal of Botany*, 62(8), 689-697. (Published)

- 2) **Bashir, H.**, Hussain, S., Khalid, A. N., Niazi, A. R. K., Parra, L. A., & Callac, P. (2018). First report of *Agaricus* sect. *Brunneopicti* from Pakistan with descriptions of two new species. *Phytotaxa*, 357(3), 167-178. (Published)
- 3) Izhar, A., **Bashir, H.**, & Khalid, A. N. (2019). A new species of *Conocybe* (Bolbitaceae) from Punjab, Pakistan. *Phytotaxa*, 402(5), 251-258. (Published)
- 4) **Bashir, H.**, Jabeen, S., Bashir, H. & Khalid, A. N. (2020). *Gymnopilus dunensis*, a new species from Punjab province, Pakistan. *Phytotaxa*, 428(1), 051-059. (Published)
- 5) Ali, M., Khan, J., **Bashir, H.**, Niazi, A. R., Sher, H., & Khalid, A. N. (2020). *Infundibulicybe macrospora* sp. nov., a new and noteworthy species from Himalayan moist temperate forests of Pakistan. *Phytotaxa*, 452(4), 268-277. (Published)
- 6) **Bashir, H.**, Usman, M., & Khalid, A. N. (2020). *Lepiota cholistanensis* a new species of *Lepiota* (Agaricaceae: Basidiomycota) from Cholistan desert, Pakistan. *Phytotaxa*, 455(4), 267-276. (Published)
- 7) Danny Haelewaters, Bálint Dima, Abbas I.I. Abdel-Hafiz, Mohamed A. Abdel-Wahab, Samar R. Abul-Ezz, Ismail Acar, Elvira Aguirre-Acosta, M. Catherine Aime, Suheda Aldemir, Muhammad Ali, Olivia Ayala-Vásquez, Mahmoud S. Bakhit, **Hira Bashir** .... & Irmgard Krisai-Greilhuber. Fungal Systematics and Evolution: FUSE 6. *Sydowia*. 72, 227-233. (Published).
- 8) Izhar, A., Khalid, A. N. & **Bashir, H.** (2020). *Termitomyces sheikhupurensis* sp. nov. (Lyophyllaceae, Agaricales) from Pakistan, evidence from morphology and DNA sequences data. *Turkish Journal of Botany*, 44(6), 694-704.
- 9) Wajiha Siddiqi, **Hira Bashir** & Abdul Nasir Khalid. (2020). Cultivation potential of wild indigenous *Agaricus* (L.) species from Pakistan. *Journal of Fungal Biology*, 10(1), 466-474.
- 10) **Hira Bashir**, Sana Jabeen, Sadiqullah, Junaid Khan, Abdul Rehman Khan Niazi, Jie Chen, Mingzhe Zhang, Abdul Nasir Khalid, Luis A. Parra, Philippe Callac. An overview of *A.* sect. *Hondenses* and *A.* sect. *Xanthodermatei* and description of eight new species from Pakistan (2021). *Scientific Reports*, 11(1), 1-35.
- 11) Jabeen, S., Bashir, H., & Khalid, A. N. (2021). *Pseudosperma albobrunneum* sp. nov. from coniferous forests of Pakistan. *Mycotaxon*, 136(2), 361-372.
- 12) Niazi A. R., **Bashir H.**, Farooq Anaiza & Khalid A. N. (2020). A new species of *Leucoagaricus* section *Rubrotincti* from largest man-made forest (Changa Manga) from Pakistan. (Under review in *Bangladesh Journal of Botany*)
- 13) Umar, A., Ahmed, S., & **Bashir, H.** (2021). *Ganoderma leucocontextum*, a new record from Pakistan. *Mycotaxon*, 136(2), 529-539.
- 14) Ullah, Z., Jabeen, S., Zainab, S., **Bashir, H.**, Faisal, M., Ahmad, H., & Khalid, A. N. (2021). *Pholiota malakandensis* sp. nov., in subg. *Flammuloides* from Pakistan. *Nova Hedwigia*, 229-241.
- 15) ASIF, M., Niazi, A. R., Izhar, A., Khalid, A. N., & **Bashir, H.** (2021). *Leucoagaricus fragilis* sp. nov. (Agaricaceae) from Punjab, Pakistan. *Phytotaxa*, 501(1), 140-150.
- 16) Abdul Rehman Niazi, Aneeqa Ghafoor, **Hira Bashir**. A checklist of *Agaricus* from Pakistan. *Mycotaxon*, 136, 877-Mycobiota new to www.mycotaxon.com
- 17) Aiman IZHAR, Abdul Rehman NIAZI, Muhammad ASIF, Muhammad Haq NAWAZ, **Hira BASHIR**, & Abdul Nasir KHALID. (2022). *Limacella subtropicana* (Amanitaceae, Agaricales) a new species from Pakistan based on morphological and molecular phylogenetic evidence. *Turkish Journal of Botany*, 46: 1-11. doi:10.3906/bot-2109-47
- 18) Izhar, A., Usman, M., **Bashir, H.**, Ashraf, S., Latif, M., Niazi A. R., & Khalid, A. N. (2022). First record of *Lactocollybia variicystis* (Marasmiaceae) from Asia. *Mycotaxon*, 137, 335-344. DOI: <https://doi.org/10.5248/137.335>
- 19) Nidaa Harun, Shabnum Shaheen, Mushtaq Ahmed, Fozia Bibi, Kaneez Fatima, Sehrish Ramzan, and **Hira Bashir** (2022). "Light and scanning electron microscopic imaging of leaf transverse sections of indigenous fodder grasses of central Punjab, Pakistan." *Microscopy Research and Technique*, 1-17. DOI: 10.1002/jemt.24104
- 20) Harun, N., Chaudhry, A. S., Shaheen, S., Ahmad, M., Sahan, Z., & **Bashir, H.** (2022). Connecting nutritional facts with the traditional ranking of ethnobotanically used fodder grasses by local farmers in Central Punjab of Pakistan. *Scientific Reports*, 12(1), 1-15.
- 21) BASHIR, HIRA, NADIA FATIMA, AIMAN IZHAR, ABDUL REHMAN NIAZI, ABDUL NASIR KHALID, and PHILIPPE CALLAC. "*Agaricus radiatosquamulosus* sp. nov. of *A.* subg. *Spissicaules* from Pakistan." *Phytotaxa* 579, no. 4 (2023): 231-242.

- 22) Izhar, Aiman, Zaman Khan, Muhammad Asif, **Hira Bashir**, Afifa Kainat Rani, Abdul Rehman Niazi, and Abdul Nasir Khalid. "Clitopilus cretoalbus sp. nov.(Entolomataceae, Agaricales), a new species from Pakistan." *European Journal of Taxonomy* 861 (2023): 168-184.

Total Impact Factor: 36.5

### **On Going Research Projects**

- 1) **Hira Bashir**, Muhammad Asif, Aneeqa Ghafoor , Abdul Rehman Niazi, Abdul Nasir Khalid & Philippe Callac. Phylogenetics and morphological descriptions of four new species and one new record of *Agaricus* sect. *Minores* from Pakistan. Under peer review in Journal of Fungi (IF=5.7).
- 2) Zia Ullah, Sana Jabeen, Wajid Ali, **Hira Bashir**, Muhammad Faisal, & Abdul Nasir Khalid: *Hortiboletus swaticus* sp. nov. from Himalayan forests of Pakistan under final review in Nova Hedwegia (IF=1.5).
- 3) Four new species of *Leucoagaricus* from moist temperate forests of Pakistan. **Hira Bashir**, Muhammad Asif & Abdul Nasir Khalid. In process of preparation.

### **COMMAND ON SUBJECTS:**

1. Fungal Biotechnology (all kinds of culture media preparation), Systematics and Molecular techniques (Genome DNA extraction, PCR, DNA Sequencing, Gel Electrophoresis, nanodrop usage, Phylogenetics), research laboratory techniques (autoclaving, laminar air flow chamber usage, incubator usage, general laboratory equipment usage)
2. Ectomycorrhizal diversity for forestation programs
3. Culturing and cultivation of edible mushrooms (working on the cultivation and commercialization of Oyster mushrooms)

### **LABORATORY SKILLS:**

1. Worked for 3 years as a **Research Associate** in an HEC research project entitled "**Establishment of DNA Sequence Database for Identification of Macrofungi of Pakistan**" under National Research Program for Universities – Higher Education Commission project No. 20-3183/NRPU/R&D/HEC/14/184.
2. Worked as **Principal Investigator (PI)** in SRGP (Start-Up Grant Project) 1 year project entitled "**Molecular identification of some gilled mushrooms using different DNA barcode markers from Swat and Shangla, Pakistan**" under HEC.

### **RESEARCH INTEREST:**

1. **PCSIR** recently awarded **Rs. 990,000** for access to scientific instrumentation under a development programme in a research project.
2. **PCSIR** awarded an amount of Rs. 492,250 to 03 MPhil research students working under my co-supervision (**Net amount = 492,250 \* 3 = 1476,750**). All the research projects are related to Macrofungi of Pakistan. The projects are just approved in April, 2022, so grant is still unspent. I can spend all the amount in the institute where appointed on regular basis.

### **TEACHING EXPERIENCE**

1. 4 years experience of conducting labs of M.Sc., MS/M.Phil. and Ph.D. in Botany (Ectomycorrhizae in Forestry), University of the Punjab, Lahore.
2. 2 semesters teaching experience (BS Botany) in University of Education, Bank road campus, Lahore, as a visiting faculty.
3. Served in University of Okara, taught Lower Fungi, Higher Fungi, Plant Biochemistry I & II, Phycology & Bryology, Environmental Sciences to BS and M.Sc. & Industrial Mycology, Mycosymbiosis, and Cell and Molecular Biology to M.Phil/MS.
4. Molecular techniques based on DNA extractions, PCR, DNA sequencing database generation, DNA sequence editing and single and multi-gene phylogenetic analyses for taxon identification of plants or fungi.

- Single and multigene phylogenetic analyses and tree construction to study the time of evolution of a species (Fungal or plant).
- Culturing of mushrooms from spores (dried specimens) and fresh sporocarps to prepare spawn used in cultivation of edible mushrooms.
- Running a small local industry of Oyster mushrooms (production & selling).

### **COMPUTER SKILLS:**

- Supervised one thesis of BS student Mr. Kashif Bashir (session 2017-21) entitled "Morphoanatomical and molecular characterization of some mushrooms from Shangla and Swat District, Khyber Pakhtunkhwa, Pakistan.
- Co-supervised 19 theses of MPhil and MS students, details are below:

### **Students Co-Supervised by Dr. Hira Bashir**

Roll Number	Reg. No.	Name	Title	Co-Supervisor
<b>M.PHIL BOTANY FALL 19-21 MORNING</b>				
F19-M.PHIL-BOT-1009	19-UO-3602	MUJAHIDA KAUSAR	Numerical Evaluation of Ethnomedicinally Important Floristic Elements from Hujra Shah Muqem, Tehsil Depalpur, District Okara (Pakistan).	Dr. Hira Bashir
F19-M.PHIL-BOT-1011	19-UO-3591	IFFAT RAMZAN	Ethnobotanical Assessment of Wild Fruits and Vegetables Utilized by the Rural Population of Tehsil Renala Khurd, District Okara (Pakistan).	Dr. Hira Bashir
F19-M.PHIL-BOT-1019	19-UO-3578	ANILA ATIQUE	Documentation of Ethnomedicinal Flora Reported by the Local Communities Inhabited along the River Ravi, Punjab (Pakistan).	Dr. Hira Bashir
F19-M.PHIL-BOT-1024	19-UO-3610	SADIA JABEEN	Economically Utilization of Wild Fruits and Vegetables by the Natives of Pipli Pahar Plantation, District Okara (Pakistan).	Dr. Hira Bashir
F19-M.PHIL-BOT-1029	19-UO-3631	SHAHID HUSSAIN	Diversity and Phytosociological Analysis of Invasive Alien Flora From District Okara (Pakistan).	Dr. Hira Bashir
<b>M.PHIL BOTANY FALL 19-21 EVENING</b>				
F19-M.PHIL-BOT-5029	19-UO-3627	MUNWAR ZAREEF	<i>Ethnobotanical Assessment of Indigenous Wild Flora from Punjad Headworks, District Muzaffargarh, Punjab, Pakistan</i>	Dr. Hira Bashir
F19-M.PHIL-BOT-5030	19-UO-3605	NIMRA AROOJ	<i>Culturing Strategies and Cultivation of few Members of Genus Agaricus and Pleurites from KPK and Punjab (Pakistan).</i>	Dr. Hira Bashir
<b>M.PHIL BOTANY SPRING 19-21 EVENING</b>				
S19-MPHILBOT-3018	19-UO-627	RUSHNA KARIM	<i>Ethnobotanical And Phytosociological Exploration Of Sedges And Grasses From Selected Sites Of District Okara.</i>	Dr. Hira Bashir
S19-MPHILBOT-3030	19-UO-3030	USMAN ASHRAF	<i>Ethnoveterinary Practice And Medicinal Utilization Of Floristic Elements By Local People Of Selected Villages Of Teh Depalpur Dist. Okara</i>	Dr. Hira Bashir
S19-MPHILBOT-3006	19-UO-3006	AHMAD HASSAN	<i>Ethnobotanical Study Of Traditional Medicinal Plants Used By Indigenous People In Chichawatni District Sahiwal</i>	Dr. Hira Bashir

Roll No.	Student Name	Supervisor	Approved Co-Supervisor	Titles'
F20-MPHIL-BOT-1020	<b>Fatima Arooj</b>	Ms. Imrana Bukhari	Dr. Hira Bashir	Morpho-anatomical characterization of some mushrooms from different areas of Swat, Pakistan
F20-MPHIL-BOT-5021	<b>Abdullah Moaz</b>	Ms. Imrana Bukhari	Dr. Hira Bashir	Molecular phylogeny and morphological data of some mushrooms from Changa Manga forest, Pakistan.
F20-MPHIL-BOT-5026	<b>Awais Ali</b>	Ms. Imrana Bukhari	Dr. Hira Bashir	Molecular and morphological characterization of fungal flora of largest man-made forest of Pakistan.
F20-MPHIL-BOT-5022	<b>Maira Mehmood</b>	Dr. Naila Mukhtar	Dr. Hira Bashir	Identification of some gilled mushrooms using morphological and molecular tools from moist temperate forests of Pakistan
F20-MPHIL-BOT-5024	<b>Kaynat Ali</b>	Ms. Imrana Bukhari	Dr. Hira Bashir	Characterization of some fungal taxa using macromorphological and phylogenetic evidences from different areas of Swat and Shangla, Pakistan
F20-MPHIL-BOT-1013	<b>Zunaira Safdar</b>	Dr. Fahim Arshad	Dr. Hira Bashir	Identification of fungal flora using DNA barcode markers and implications for taxonomy of some mushrooms from Shawar forest, Swat, Pakistan
F20-MPHIL-BOT-1027	<b>Ayesha Hanif</b>	Dr. Fahim Arshad	Dr. Hira Bashir	Molecular phylogeny based on Internal Transcribed Spacer region sequences combined with morphological data of some mushrooms of Malam Jabba, Swat, Pakistan.
F20-M.PHIL-BOT-5003	<b>Rabia Tariq</b>	Dr. Fahim Arshad	Dr. Hira Bashir	Some edible varieties of Oyster mushrooms and evaluation of their commercialization using different growth parameters in Pakistan

### **CONFERENCES/ SEMINARS ATTENDED:**

1. Six months research experience at **Research unit MycSA of the INRA**, Center Nouvelle-Aquitaine-Bordeaux, France.
2. Worked as a **Research Associate** for three years (May, 2016 to May, 2018) in a project entitled '**Establishment of DNA Database for Identification of Macrofungi of Pakistan**' under Higher Education Commission of Pakistan (HEC).
3. Research experience of six years (2012-2018) at Department of Botany, University of the Punjab, Lahore.
4. Teaching as a visiting Assistant Professor at University of Education, Lahore, from February 2019 to February 2020.
5. Appointed as an IPFP-Fellow (equivalent to PostDoc) by HEC at University of Okara. Teaching and research theses co-supervised and a research project was completed (October 2020 to October 2021).
6. Worked as **Principal Investigator (PI)** in SRGP (Start-Up Research Grant Project), HEC, entitled "Molecular Identification of Some Gilled Mushrooms Using Different DNA Barcode Markers from Swat and Shangla, Pakistan".
7. Continued as a visiting Assistant Professor (Botany) at University of Okara.

### **PERSONAL STATEMENT**

1. Philippe Callac, a first class engineer/scientist (IR1) at Research unit MycSA of the INRA Center Nouvelle-Aquitaine-Bordeaux, France.
2. Luis Alberto Parra in Spain (publication details available on demand).
3. Jie Chen in Mexico (publication details available on demand).
4. Danny Haelwaters in US (publication details available on demand).

### **ACADEMIC QUALIFICATIONS**

- 6<sup>th</sup> International and 15<sup>th</sup> National Conference at SBK, Quetta (Dated: 9-11 May, 2017).
- 7<sup>th</sup> International and 16<sup>th</sup> National Conference at Islamia College Peshawar (Dated: 23-26 March, 2018).
- 2<sup>nd</sup> International Conference on "Conservation of Medicinal and Aromatic Plants for Improving the Livelihood of Mountain Communities through Industrial Linkages at University of Swat in collaboration with Higher Education Commission of Pakistan (HEC) FROM 3<sup>rd</sup> to 5<sup>th</sup> September, 2018".
- 2<sup>nd</sup> International Conference on "PLANT SCIENCES (ICPS-2018)" at Department of Botany, GC University, Lahore from December 5-7, 2018.
- 1<sup>st</sup> International Symposium on Current Trends and Future Perspectives in Botanical Research, 2020 on 10<sup>th</sup> November, 2020. Worked as an organizer at University of Okara, Okara.
- ProQuest Education training on "How to Manage Your References Using RefWorks" in partnership with Higher Education Commission from December 01, 2020.
- ProQuest Education training on "Dissertation & Theses eLearning Companions & Author Services Marketplace" (training @proquest.com) in partnership with Higher Education Commission from January 19, 2021.
- General Secretary in 1<sup>st</sup> ANNUAL NATURAL PRODUCT EXHIBITION at Department of Botany, University of Okara (30<sup>th</sup> March, 2021).
- Organizer in "Cleanliness walk and Symposium: Smog, Global Warming and Food Security, held on 1<sup>st</sup> and 19<sup>th</sup> November, 2021 organized by Department of Botany and Department of Environmental Sciences, University of Okara.
- Organizer in Kitchen Gardening: "A promising approach to enhance house hold food security and wellbeing", February 15, 2022 at University of Okara.
- General Secretary in 2<sup>nd</sup> ANNUAL NATURAL PRODUCT EXHIBITION at Department of Botany, University of Okara (30<sup>th</sup> March, 2022).
- Resource person in Hands on training workshop on "Mushroom Cultivation" at department of Botany, LCWU, Lahore on 17<sup>th</sup> June, 2022.

## RESEARCH WORK

Sr. no	Name	Roll no.	Thesis Title	Institute/University	Date of Viva
1	Aiza Akram	MPhilBT-24F20	Taxonomic Diversity & Molecular Phylogenetics of some Macrofungi of Khanspur, KP, Pakistan	Dept. of Botany, University of the Punjab, Lahore	17/6/22
2	Saba Riaz	MSCBOT-72F20	Systematics of some gilled mushrooms from Azad Jammu Kashmir, District Bagh, Pakistan	Dept. of Botany, University of the Punjab, Lahore	23/6/22
3	Muhammad Abdullah	BSMB-F18-050	Systematic Meta-analysis study of Co-relation Between Lymphocytes and Neutrophils in COVID-19 patients	Dept. of Biological Sciences, Superior University, Lahore	24/6/22
4	Khadija Aslam Khokar	BSMB-F18-019	Pulmonary Fungal Co-infection Associated with COVID-19	Dept. of Biological Sciences, Superior University, Lahore	24/6/22
5	Zobia Khalid	BSMB-F18-011	Isolation and Characterization of Plant Growth Promoting Bacteria	Dept. of Biological Sciences, Superior University, Lahore	24/6/22
6	Muhammad Junaid	BSMB-F18-019	Comparative Analysis of Biofertilizer and Commercial Chemical fertilizer on <i>Zea mays</i> (maize)	Dept. of Biological Sciences, Superior University, Lahore	24/6/22
7	Arham Mashood	BSMB-F18-047	Comparative Nutritional Profiling of Different Varieties of <i>Triticum aestivum</i> (Wheat)	Dept. of Biological Sciences, Superior University, Lahore	24/6/22

<b>8</b>	Fatima Sohail	2016- VA-873	Genetic Diversity of internal transcribed spacers rDNA of brown gilled fungi for species delimitation from Nathia gali forests KP, Pakistan	Department of Biological Sciences / Botany, UVAS	11/11/22
<b>9</b>	Aliya Bano	2020- VA-1667	Molecular identification of some lichens of Khaplu valley, Gilgit Baltistan, Pakistan	Department of Biological Sciences / Botany, UVAS	23/05/23