


## Curriculum Vitae

<b>Name</b>	<b>Dr. Bhavana Sharma Jha</b>			
<b>Department</b>	Botany			
<b>Address</b>	Lab No. 21, Department of Botany, University of Delhi, New Delhi - 110007			
<b>Phone No.</b>	(+91) 9999496374			
<b>Email</b>	<a href="mailto:bhavanasharma2511@gmail.com">bhavanasharma2511@gmail.com</a>			
<b>Educational Qualifications</b>				
<b>Degree</b>	<b>Institution</b>	<b>Year</b>	<b>Details</b>	
Ph.D (Botany)	Department of Botany, University of Delhi	2020	Submitted in 2019*	
M.Phil (Botany)	Department of Botany, University of Delhi	2013	First division with distinction <b>(University Topper)</b>	
MSc. (Botany)	Ramjas College, University of Delhi	2012	First division	
BSc. (Botany)	Ramjas College, University of Delhi	2010	First division	
<b>*Title : Comparative Proteome &amp; Lipid Profiling of Indian Seabuckthorn (Himalayan Shrub) for understanding its Stress tolerance &amp; Nanobiotechnological Applications.</b>				
<b>Career Profile</b>				
<ul style="list-style-type: none"> <li>• <b>Assistant Professor</b> (Guest faculty) in <b>Gargi College</b>, Department of Botany, University of Delhi from April till July, <b>2023</b> .</li> <li>• <b>Assistant Professor (Ad-hoc)</b> in <b>Kirori Mal College</b>, Department of Botany, University of Delhi from September, 2021 till November, <b>2022</b>.</li> <li>• <b>Assistant Professor</b> (Guest faculty) in <b>Gargi College</b>, Department of Botany, University of Delhi from January till April, <b>2021</b>.</li> <li>• <b>Assistant Professor</b> (Guest faculty) in <b>Kalindi College</b>, Department of Botany, University of Delhi from September, <b>2019</b> till <b>2020</b>.</li> <li>• <b>Technical assistant</b> for <b>M.Phil &amp; Ph.D Botany coursework</b> elective paper "<b>Nano-Biotechnology</b>" during academic session <b>2018-19</b> in Department of Botany, University of Delhi.</li> <li>• <b>Technical assistant</b> for <b>M.Sc. Botany elective paper</b> "Genomics &amp; <b>Proteomics</b>" in Semester-IV for the academic session <b>2014-2018</b> in Department of Botany, University of Delhi.</li> <li>• <b>UGC-BSR Fellowship (JRF &amp; SRF) for Meritorious Students in Science</b> (2013-2018) at Department of Botany, University of Delhi.</li> </ul>				
<b>Research Interests/Specialization</b>				
Proteomics, High-altitude Stress Biology, Seabuckthorn, Antifreeze proteins, Nanobiotechnology				
<b>Academic/Administrative Assignments</b>				
<ul style="list-style-type: none"> <li>• <b>Reviewer</b>, for Journal "3 Biotech" (Springer, Impact factor – 2.893).</li> <li>• Preparation of an advance Skill Enhancement Course (SEC, 2 credits) module "Green Nanobiotechnology - Concepts, Applications &amp; Tools" for <b>NEP framework, 2023</b> Department of Botany, Kirori Mal College, University of Delhi.</li> </ul>				

- **Resource person** in **Hands-on-training workshop** and **Delivered a lecture** on “Sustainable applications of Green Nanoparticles” for **Certificate course** on Nanobiotechnology organised by **Kirori Mal College & Institute of Nanomedical Sciences**, University of Delhi, **24-25 Sep, 2022**.
- Co-guided students for **short term research projects** along with TIC, Department of Botany, Kirori Mal College under the DBT Star College Scheme.
- **External examiner** and **Member**, Board of **Paper setters** for “Analytical Techniques in Plant sciences (OC)” for undergraduate CBCS examination in May, 2022.
- **Member, Admission committee** for B.Sc.(H) Botany for academic sessions 2021-22 & 2022-23.
- **Co-PI** of the **(in-house) project** "Green Synthesis of Gold Nanoparticles from *Rhoeo discolor* leaf & study of its Antimicrobial Properties" at **Kalindi College**, University of Delhi in **2019-20**.

### **Academic Assignments in Department of Botany, University of Delhi**

- **Resource person/Technical support** in a series of hands-on-training **Plant Proteomics Workshops** organized every alternate year by **Prof. Renu Deswal for training the faculty, research scholars and students** at Department of Botany, University of Delhi **2021, 2019, 2017, 2015, 2013**.
- **Technical assistant** for **M.Sc. Botany** elective paper “Genomics & **Proteomics**” in Semester-III (2014-2018) and **M.Phil & Ph.D Botany coursework** elective paper “**Nano-Biotechnology**” (2018-19) in **Department of Botany, University of Delhi**.
- **President, Delhi University Botanical Society** (2014-15), Department of Botany, University of Delhi.
- Organized various Departmental Workshops, Seminars, Plenary Lectures, Annual Reports under the banner of Delhi University Botanical society (DUBS), Department of Botany, University of Delhi.

### **Awards & Distinctions**

- **2021, Worldwide First Seabuckthorn Proteome Data Repository** of all the three different Indian **Seabuckthorn** species growing in the **Himalayas**. Dataset submitted in PRIDE ‘**PR**oteomics **ID**entifications **d**atabase’ with accession number “PXD023184”.
- **2021, Best Poster** award in **International conference** on “Nanomedicine : Biomolecules for Human Health (NBHH), Small molecules - Big opportunities” at Kirori Mal College, University of Delhi, India (**Received cash prize of Rs. 3000/-**).
- **2020, Research article** (Sharma & Deswal, 58-76; Vol 68, January issue) published & highlighted on **Cover Page of Physiologia Plantarum (Impact Factor : 5.081)**.
- **2019, Best poster award** in **3<sup>rd</sup> National Conference of Seabuckthorn Association of India** on “Seabuckthorn: Translating Research into Sustainable Utilization & Conservation” held at Department of Botany, University of Delhi (**Received cash prize of Rs. 5000/-**).
- **2017, Best poster award** in **86<sup>th</sup> Annual Conference of Society of Biological Chemists** on “Emerging Discoveries in Health & Agricultural Sciences” held at **J.N.U**, Delhi, India.
- **2017, Best poster award at National Conference on Seabuckthorn** on “Improving Health & Sustainable Development of Himalayan Region”, organised by Seabuckthorn Association of India, **Defence Institute of High Altitude Research (DIHAR) & Ladakh** Autonomous Hill Development Council held at **DIHAR**, Leh-Ladakh, India. (**Received cash prize of Rs. 5000/-**).

- 2016, Research article highlighted on **Cover page of Journal of Proteins & Proteomics.**
- 2014-15, **President, Delhi University Botanical Society, Department of Botany, University of Delhi.**
- 2013-18, University Grants Commission Fellowship for Meritorious students in Science.
- 2013, **Second Best Article** award for article "Plant Proteomics" published in "*The Botanica*". **(Received cash prize of Rs. 1000/-).**
- 2012-13, **University topper in M.Phil (Botany), Department of Botany, University of Delhi.**
- 2004-05, **Prefect, Army School, Mathura Cantonment.**

### Subjects taught

- Plant Anatomy & Embryology (Life Sciences II Year)
- Anatomy of Angiosperms (B.Sc. (H) Botany II Year)
- Analytical Techniques in Plant Sciences (B.Sc. (H) Botany & Life Sciences III Year)

### Publications (Peer-Reviewed/Indexed Journals)

- **Total Impact factor** : **38.5**
- **Total Publications** : **19**
- Indexed/Peer Reviewed Journals : 14
- Popular Articles : 03
- Book Chapter/Proceedings : 02

### Publications (Peer-Reviewed)

1. Kailash Yadav, Meenakshi Arya, Satya Prakash, **Bhavana Sharma Jha**, Preet, Abhishek, Renu Deswal (2023). *Brassica juncea* leaf cuticle contains xylomannan showing antifreeze activity on leaf surface. **Planta**, 258:44 (IF – 4.3). **Novel finding of AFPs in Brassica.**
2. **Bhavana Sharma Jha\***, Kriti Bharadwaj\*, & Renu Kathpalia (2022). Biofabrication & optimization of silver nanoparticles synthesized using *Campsis* sp. to explore their antimicrobial properties. **Indian Journal of Biochemistry & Biophysics**, 59(12), 1176-83. (IF – 1.476).
3. Renu Kathpalia, Vibha G. Checker, **Bhavana Sharma** & Tanushri Saxena (2022). Environmental Nanotechnological applications for Sustainable agriculture. **Indian Journal of Biochemistry & Biophysics**, 59(11), 1056-68. ISSN No : 0975-0959. (IF – 1.476).
4. **Bhavana Sharma** & Renu Deswal (2021). Comparative proteome profiling of seabuckthorn leaves from low altitude 'Sikkim' & high altitude 'Himachal Pradesh' Himalayan regions hints towards differential stress adaptive responses. **Journal of Proteins & Proteomics**, ISSN No : 2524-4663. (Springer, IF – 1.0\*\*). **Worldwide First Seabuckthorn Proteome Repository.**
5. **Bhavana Sharma\***, Vibha G. Checker\* & Renu Kathpalia (2021). Nanoinformatics - A newly introduced tool for research. **Indian Journal of Biochemistry & Biophysics**, 59(4), 431-439. ISSN No : 0975-0959. (IF – 1.918).
6. **Bhavana Sharma** & Renu Deswal (2020). Ecophysiological analysis of stress tolerant Himalayan shrub *Hippophae rhamnoides* shows multifactorial acclimation strategies induced by diverse environmental conditions. **Physiologia Plantarum**, 68, 58-76. ISSN No: 1399-3054. (IF – 6.4). **# Research highlighted on the cover page of Physiologia Plantarum.**

7. **Bhavana Sharma**, Shaweta Arora, Dinabandhu Sahoo & Renu Deswal (2019). Comparative fatty acid profiling of Indian seabuckthorn showed altitudinal gradient species-specific variations. **Physiology & Molecular Biology of Plants**, 26, 1-9. ISSN: 0974-0430. (IF– 3.4).
8. **Bhavana Sharma**, Ravi Gupta, Dinabandhu Sahoo & Renu Deswal (2019). Purification of dual-functioning chitinases with hydrolytic & antifreeze activities from *H. rhamnoides* seedlings. **Journal of Proteins & Proteomics**, 10, 69-81. ISSN No : 2524-4663. (Springer, IF – 1.0\*\*).
9. **Bhavana Sharma** & Renu Deswal (2018). Single pot synthesised nanoparticles using *H. rhamnoides* leaf & berry extract showed shape dependent differential nanobiotechnological application. **Artificial Cell, Nanomedicine, & Biotechnology**, 1-11. ISSN No : 1399-3054. (IF – 6.343). *First report on seabuckthorn gold nanoparticles.*
10. **Bhavana Sharma**, Dinabandhu Sahoo & Renu Deswal (2018). Single-step purification & characterization of antifreeze proteins from leaf & berry of a freeze tolerant shrub *Hippophae rhamnoides*. **Journal of Separation Science**, 41, 3938-3945. ISSN : 1615-9314. (IF – 3.614). *Worldwide, first report on AFPs purified from naturally growing seabuckthorn.*
11. Amarjeet Singh, **Bhavana Sharma** & Renu Deswal (2018). Green silver nanoparticles from novel Brassicaceae cultivars with enhanced antimicrobial potential than earlier reported Brassicaceae members. **Journal of Trace Elements in Medicine & Biology**, 47, 1-11. ISSN : 1878-3252. (IF – 3.995).
12. **Bhavana Sharma**, Ravi Gupta & Renu Deswal (2016). Mining the Protein Repertoire of a Himalayan Shrub, *H. rhamnoides* for Antifreeze Proteins. **Journal of Proteins & Proteomics**, 7(2) 199-211. ISSN : 2524-4663. # *Research highlighted on the cover page of the Journal.*
13. **Bhavana Sharma** & Renu Deswal (2014). Antifreeze Proteins In Plants : An Overview with an Insight into the Detection Techniques including Nanobiotechnology. **Journal of Proteins & Proteomics**, 5(2), 89-107. ISSN : 2524-4663.
14. Renu Deswal, Jasmeet K. Abat, Ankita Sehrawat, Ravi Gupta, Prakriti Kashyap, Shruti Sharma, **Bhavana Sharma**, Antonio Masi, et al. (2014). First Systematic Plant Proteomics Workshop in Botany Department, University of Delhi: Transferring Proteomics Knowledge to Next-generation Researchers & Students. **Proteomics**, 14, 1581-1586. ISSN : 1615-9861. (IF – 5.393).

### Popular Articles

1. Renu Deswal, Meenakshi Arya, Satya P. Chaurasia, Yaiphabi C. Sougrakpam, Priyanka Babuta, **Bhavana Sharma** & Shruti Sharma. (2017). Proteome Analysis of *Brassica*, Seabuckthorn & *Dioscorea* for Dissecting Abiotic (Cold/Freezing) Stress Signalling & Redox Modulation. **The Botanica**, 67, 24-33. ISSN No : 0045-2629.
2. **Bhavana Sharma**, Ravi Gupta & Renu Deswal (2013). Seabuckthorn-The New Age Sanjeevani. **The Botanica**, 62-63, 44-52. ISSN No : 0045-2629.
3. **Bhavana Sharma** & Renu Deswal (2013). Plant Proteomics: Driving Force Behind Current Plant Sciences. **The Botanica**, 62-63, 160-172. ISSN No : 0045-2629. *Awarded second best article award with cash prize of Rs. 1000/-*

### Book chapter/Proceedings

1. Ravi Gupta, **Bhavana Sharma** & Renu Deswal (2022). Deciphering the Proteomes & Nanotechnological Potential of an Unexplored Plant Seabuckthorn. In : Sharma, P.C. (editor) **The**

**Seabuckthorn Genome.** Compendium of Plant Genomes. Springer. [https://doi.org/10.1007/978-3-031-11276-8\\_7](https://doi.org/10.1007/978-3-031-11276-8_7), Print ISBN 978-3-031-11275-1, (**Springer, 24 November 2022**).

2. **Bhavana Sharma & Renu Deswal (2015).** Extraction & Purification of Antifreeze proteins in *Hippophae rhamnoides* seedling berry & leaf. In Proceedings of Conference of International Seabuckthorn Association on “Seabuckthorn: Emerging technologies for Health protection & Environmental conservation” 289-298, 24<sup>th</sup>-26<sup>th</sup> Nov, 2015, New Delhi. **ISBN No : 8170355205.**

\* **Equal contribution**, \*\* **Projected Impact factor**

### Resource person

- **2022, Resource person** in **hands-on-training workshop** and **delivered a lecture** on “Sustainable Application of Green Nanoparticles” for Second **Certificate course** on Nanobiotechnology organised by **Kirori Mal College & Institute of Nanomedical Sciences**, University of Delhi, 24-25 Sep, 2022.
- **2021, Rapporteur** in **Conference** entitled “**Next Generation Proteome Mining & Nano-Bio interactions for Better Plant Health**” organized by Delhi University Botanical Society (DUBS), University of Delhi, India on 27<sup>th</sup>-29<sup>th</sup> Dec, 2021.
- **2021, Resource person** in hands-on-training **5<sup>th</sup> Plant Proteomics Workshop** held in Department of Botany, University of Delhi from 23-27<sup>th</sup> Dec, 2021.
- **2019, Technical resource person** in hands-on-training **4<sup>th</sup> Plant Proteomics Workshop & National Conference** “Seabuckthorn Genomics, Proteomics & Metabolomics” held in Department of Botany, University of Delhi from 23-27 Dec, 2019.
- **2019, Technical support** in **3<sup>rd</sup> National Conference on Seabuckthorn** : Translating research into sustainable utilization & conservation held in Department of Botany, University of Delhi.
- **2017, Technical support** in hands-on-training **3<sup>rd</sup> Plant Proteomics Workshop** “Mining Proteome & Deep Proteome (sub-cellular proteome analysis, depletion, affinity enrichment) & beyond” held at Department of Botany, University of Delhi, India from 19<sup>th</sup>-23<sup>rd</sup> Dec, 2017.
- **2015, Technical support** in hands-on-training **2<sup>nd</sup> Plant Proteomics Workshop** held at Department of Botany, University of Delhi, India from 21<sup>st</sup>-26<sup>th</sup> Dec, 2015.
- **2013, Technical support** in hands-on-training **1<sup>st</sup> Plant Proteomics Workshop** held at Department of Botany, University of Delhi, India from 26<sup>th</sup>-30<sup>th</sup> Dec, 2013.
- **2014, Organizing Secretary, National Seminar** on “Does climate change influence food & energy security?” for **Prof. B.M. Johri Rolling Shield Competition**.
- **Compilation of Manual for the Plant Proteomics Workshop** held in **2019, 2017, 2015 & 2013**

### Presentation/Participation in Webinars/Conferences/Workshops/FDPs

- **2022**, Attended an online **National Conference** on “Sustainable Environmental Perspectives : A Journey From Ancient India” organized by Environmental Studies & Department of Botany, Deen Dayal Upadhyaya College, University of Delhi, in association with Paryavaran Gatividhi Sharanya (NGO), Delhi, India on 5-6<sup>th</sup> June, 2022.
- **2022**, Attended an online **International Conference** cum Workshop on “Proteomics, Transcriptomics & Molecular Drug Design : An Integrated Omics Approach” organized by



Department of Botany, Zakir Husain College in collaboration with Plant Molecular Genetics Laboratory, Department of Botany, University of Delhi, India on 25-27<sup>th</sup> May, 2022.

- **2022**, Attended a one week (online) **Interdisciplinary Faculty Development Programme** on “Environmental Sustainability & Climate Change” organized by Miranda House College in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi, Delhi, India on 4-8 April, 2022.
- **2021**, Participated & presented a **Poster** entitled “Nanoinformatics - a newly introduced tool for research” in two day **International conference** on “Nanomedicine : Biomolecules for Human Health (NBHH), Small molecules - Big opportunities” at Kirori Mal College, University of Delhi, India on 27<sup>th</sup>-28<sup>th</sup> Sep, 2021. (**Best Poster with cash prize of Rs. 3000/-**).
- **2021**, Attended two day **International conference** via virtual platform on “Post Conference **Workshop** on Nanomedicine (NBHH), Small molecules - Big opportunities” held at Kirori Mal College, University of Delhi, India on 29<sup>th</sup> Sep, 2021.
- **2021**, Participated & presented a **Poster** entitled “Environmental Nanotechnology – Perks, Challenges & Risk Assessment” in Virtual **Conference** entitled “Next Generation Proteome Mining & Nano-Biointeractions for Better Plant Health” organized by Delhi University Botanical Society, University of Delhi, India on 27<sup>th</sup>-29<sup>th</sup> Dec, 2021.
- **2021**, Attended a Virtual **Conference** entitled “Next Generation Proteome Mining & Nano-Biointeractions for Better Plant Health” organized by Delhi University Botanical Society, University of Delhi, India on 27<sup>th</sup>-29<sup>th</sup> Dec, 2021.
- **2019**, Awarded **First prize for best poster** presentation “Exploring Seabuckthorn, a Himalayan Wonder plant for Understanding its Stress tolerance & Nanobiotechnological Applications” at **3<sup>rd</sup> National Conference of Seabuckthorn Association of India** on “Seabuckthorn: Translating Research into Sustainable Utilization & Conservation” held at Department of Botany, University of Delhi, India. (**Received cash prize of Rs. 5000/-**).
- **2019**, Presented poster on “*Hippophae rhamnoides* a cold tolerant wonder plant with potential biomedical & nanotechnological applications” at **6<sup>th</sup> World congress in Nanomedical sciences & chemistry Biology interface 2019** & Conference on Science & technology for the future of mankind held at Vigyan Bhawan, New Delhi.
- **2018**, Oral presentation on “Nanobiotechnological potential of the underutilized Himalayan shrub, Seabuckthorn for decontaminating fabric dye containing waste water” at **2<sup>nd</sup> National Conference** of SAI on “Seabuckthorn-Technologies for Cultivation Environmental Conservation Nutrition Security & Health Protection” by **Seabuckthorn Association of India** held at Shimla.
- **2017**, Awarded **First prize for best poster presentation** “Exploring Nanobiotechnological Potential of Novel North Indian varieties of Brassicaceae for Antimicrobial Potential at National Conference “Emerging Discoveries in Health & Agricultural Sciences” held at **J.N.U**, Delhi, India.
- **2017**, Awarded **First prize for best poster** presentation “Exploring the Nanobiotechnological Potential of a Himalayan Shrub, *Hippophae rhamnoides* for Azo Dyes Decontamination” in **National Conference** on Seabuckthorn for Improving Health & Sustainable Development of Himalayan Region, held at **DIHAR, Leh-Ladakh, India**. (**Received cash prize of Rs. 5000/-**)
- **2016**, Participated in **International Conference on Functional & Interaction Proteomics & 8<sup>th</sup> Annual meeting of Proteomics Society**, India organised by NIPGR, Delhi, India.

- **2015**, Oral presentation on “Proteome mining of *Hippophae rhamnoides*, a cold tolerant Himalayan shrub to identify & purify dual functioning antifreeze proteins & their potential application for cryopreservation of Red Blood Cells” at **Proteomics Society of India (PSI) Delhi chapter meeting in AIIMS, Delhi, India.**
- **2015**, Oral presentation on “Extraction & Purification of dual functioning Antifreeze proteins in *Hippophae rhamnoides* Seedling, Berry & Leaf” in “7<sup>th</sup> Conference of **International Seabuckthorn Association**” held at NASC Complex, New Delhi, India.
- **2015**, Presented poster on “Purification of Chitinases, the Dual Functioning Proteins from *H. rhamnoides* a Cold Tolerant Himalayan Shrub & Testing its Efficacy for Cryopreservation of RBCs” in “**International Conference on Low Temperature Science & Biotechnological Advances**” at NASC Complex, New Delhi, India.
- **2014**, Presented poster on “Proteome analysis suggest a cross talk between nitric oxide & cold stress signalling” in “**International Symposium on Plant Signalling & Behaviour**” held at Department of Botany, University of Delhi, Delhi, India.
- **2014**, Participated in **International Proteomics Workshop** in 6<sup>th</sup> Annual meeting of Proteomics Society, India held at Indian Institute of Technology (IIT), **Mumbai**, India.

### **Professional Societies Memberships**

- Member, Society of Biological Sciences (**SBSC**), India
- Member, Seabuckthorn Association of India (**SAI**).
- Lifetime Member, Delhi University Botanical Society (**DUBS**), Department of Botany, D.U, India.

### **Social Responsibilities**

I believe in the saying “**Practice what we preach**”. We have some ethical responsibility, a constitutional opportunity & a moral obligation to help others.

To contribute towards this responsibility, I am also associated with various social activities like :

1. Funding education of an economically weak girl child.
2. Feeding, fostering & taking care of stray cows, birds & animals. Thus, inspiring others be kind/compassionate towards other human beings, nature and animals.
3. Guidance & Financial support to the needy.
4. Encouraging students to inculcate a sense of intellectual curiosity, right scientific temperament along with social responsibility & high moral values which would enable them to become a better version of themselves and serve the Society & Nation in holistic manner.

**I dream of a world where everyone is living in harmony with each other and nature.**