



Prof. Kumar Shantanu

Professor | Department of Botany

Deshbandhu College, University of Delhi

Kalka ji, New Delhi 110019 | kshantanu@db.du.ac.in

Bryology · Himalayan Biodiversity · Plant Taxonomy · Bioinformatics

PROFESSIONAL PROFILE

Prof. Kumar Shantanu is a Professor in the Department of Botany at Deshbandhu College, University of Delhi. His interests include bryology, plant taxonomy, biodiversity, ecology and bioinformatics, with particular emphasis on Himalayan bryophyte diversity, moss systematics, ecological associations, environmental responses and molecular/computational approaches. He teaches undergraduate Botany and Life Sciences and contributes to digital learning, academic governance, student mentoring, NCC activities and interdisciplinary initiatives.

ACADEMIC QUALIFICATIONS

Qualification	Institution	Year	Thesis / details
Ph.D.	University of Delhi	2010	Mosses of Idukki in Western Ghats, India
M.Phil.	University of Delhi	2005	A Preliminary Account of Bryophytes of Uttaranchal
M.Sc. Botany	University of Delhi	2003	Postgraduate degree
B.Sc. (Hons.) Botany	University of Delhi	2001	Undergraduate degree
CSIR-UGC NET-JRF, Life Sciences	CSIR-UGC	2004	Junior Research Fellowship

CAREER PROFILE

- Deshbandhu College, University of Delhi – faculty member in Botany since July 2009; current designation: Professor.
- Associate NCC Officer, 1 Delhi Air Squadron (Flying) NCC, since 2014; historical records refer to Flying Officer and Flight Lieutenant.
- Kirori Mal College, University of Delhi – Guest Faculty, July-August 2009.
- Acharya Narendra Dev College, University of Delhi – Ad hoc faculty, July 2007-April 2008.
- Dayal Singh College, University of Delhi – Guest Faculty, September 2005-March 2007.

RESEARCH SPECIALISATION

- Bryology and morpho-taxonomy of archegoniates; plant taxonomy and systematics.
- Ecological niche modelling, ecophysiology and environmental management.
- Bioinformatics, genetics and genomics, molecular markers and computational biology.
- Himalayan bryophyte diversity, substrate associations, extremophilic mosses and phytochemical profiling.

TEACHING EXPERIENCE

- Plant biodiversity, archegoniates, algae and microbiology, plant ecology and taxonomy, plant anatomy, physiology and reproductive biology.
- Genetics and genomics, bioinformatics, biostatistics, plant biotechnology, cell biology, mycology and plant pathology.

- Analytical techniques, laboratory and field skills, research methodology, plant resource and economic botany
- Mushroom Culture and Technology, organic farming, hydroponics and aeroponics, nursery gardening and landscaping, sustainable ecotourism and entrepreneurship.
- Environmental Studies/Management, Ayurveda and Nutrition, and NCC-related value-added course.

RESEARCH PROJECTS

2024–2025 | Co-PI

Assessing the impact of climatic conditions on different metabolite profiles of extremophilic mosses.

Institute of Eminence, University of Delhi | Grant recorded: ₹6,00,000

2023–2024 | Co-PI

Studies on the Inventory, Structure and Composition of Bryoflora in some pockets of North-West Himalayan region.

Institute of Eminence, University of Delhi | Grant recorded: ₹4,90,000

2022–2023 | Co-PI

Development of Simple Sequence Repeats/Microsatellites markers using Next Generation Sequencing to assess genetic variation in *Pittosporum eriocarpum* (Royle): An endangered medicinal taxon.

Institute of Eminence, University of Delhi | Grant recorded: ₹5,00,000

SELECTED PEER-REVIEWED PUBLICATIONS

- Shantanu, K. et al. (2026). Species richness, substrata preference, and phorophyte specificity of North-Western Indian Himalayan moss species. *Environmental Monitoring and Assessment*, 198(2), Article 91. DOI: 10.1007/s10661-025-14925-3.
- Shantanu, K. et al. (2025). Clarifying the Nomenclature of Some Mosses (Bryophyta) Described From North-Eastern Himalaya, India. *Feddes Repertorium*, pp. 1-13.
- Shantanu, K. et al. (2025). Phytochemical Profiling and In Silico Analyses Reveal Drug like Characteristics in the Moss *Brachythecium salebrosum* (Bryophyta, Brachytheciaceae). *Lilloa*, 62(2), 507-530.
- Shantanu, K. (2025). Assessing Heavy Metal Accumulation Capacities of Mosses: A Comparative Analysis with Focus on Cadmium in Urban & Natural Areas of Five different Sites of India. *The Journal of Plant Science Research*, 41(1), 181-191.
- Shantanu, K. et al. (2025). Insights into the fatty acid profile and taxonomy of the extremophilic moss *Hedwigia emodica* (Bryophyta, Hedwigiaceae). *Lilloa*, 62(1), 173-186.
- Shantanu, K. et al. (2024). Two mosses—*Trachypodopsis formosana* Nog. and *Bucklandiella nitidula* (Cardot) Bedn.-Ochyra & Ochyra (Bryophyta), new additions to India. *Nelumbo*, 66(1), 70-73.
- Shantanu, K. et al. (2024). Diversity of mosses (Bryophyta) in Pangti valley (Himachal Pradesh, India): an unexplored domain of Northwestern Himalaya. *Journal of Threatened Taxa*, 16(5), 25227-25234.
- Shantanu, K. et al. (2023). A preliminary assessment of bryophyte diversity in some alpine areas of East Sikkim, India. *Indian Journal of Forestry*, 46(1), 43-49.
- Shantanu, K. et al. (2023). *Pseudomonas* sp.: A promising biocontrol agent against selected phytopathogens. *Journal of Mountain Research*, 18(1), 245-255.
- Shantanu, K. et al. (2021). Diversity and Distribution Pattern of Mosses in Cold Desert of Leh, Ladakh. *Journal of Himalayan Ecology and Sustainable Development*, 15, 1-24.
- Dandotiya, D., Govindaparyi, H., Shantanu, K. & Uniyal, P.L. (2011). Checklist of bryophytes of India. *Archives for Bryology*, 88, 1-126.
- Sinha, S., Govindaparyi, H., Shantanu, K. & Uniyal, P.L. (2009). Taxonomic implication of conducting elements in the acrocarpous mosses. *Nelumbo*, 51, 183-190.

BOOK CHAPTERS

- “Role of microRNA in plant defense” In MicroRNA Advances and Application in Plant Biology. Academic Press, India, 2024
- “Bryophyte Diversity, Utility and Prospects” In Plant Diversity of India. I.K. International Publishing House Pvt. Ltd., Delhi, India; 2018
- Shantanu Suman, Sanavar & P. L. Uniyal (2010). “Bryophytes of Uttarakhand, India.” In P. L. Uniyal, B. P. Chamola & D. P. Semwal (Eds.), The Plant Wealth of Uttarakhand Himalayas, pp. 197-276. Jagdamba Publishing Company, New Delhi.
- Sanavar, P. L. Uniyal & Shantanu Suman (2005). “Morphology and Distribution of Podostemaceae in India.” In Frontiers in Plant Sciences, pp. 809-862. I. K. International, Delhi.

CONFERENCE PAPERS AND PRESENTATIONS

- “Detection of Disease in Apple Plant using its Images of Leaf Through KNN and Support Vector Machine,” ICACRS, 12 December 2023.
- “Bryophytes as Medicine: A Remedy to Cure,” International Conference on Advance Research in Life Sciences, Kolhapur, 27-28 March 2018.
- “Quintessentiality of Bioinformatics & DNA Barcoding for Biodiversity Conservation and Management,” 1st National Bioresources and Sustainable Development Summit, 19-20 February 2015.
- Poster on copper pollution assessment, Fourth International Conference on Plants and Environmental Pollution, NBRI, Lucknow, 8-11 December 2010.
- “Mosses of Idukki, Western Ghats, India,” International Association of Bryologists meeting, South Africa, 2009.

DIGITAL LEARNING AND E-CONTENT

- UGC-CEC e-tutorial content (2020-2022): 40 modules on Archegoniates and 12 modules on Analytical Techniques used in Plant Sciences, for undergraduate Botany and Life Sciences.

YouTube playlist: [Open digital learning content](#)

ACADEMIC LEADERSHIP AND SERVICE

- Convenor, Himalayan Study Circle, Deshbandhu College (2025-2026).
- Teacher-in-Charge, Department of Botany (2023-2025); Secretary, Staff Council Committee (2023-2024).
- Convenor, Internal Assessment Committee (2021-2023); Co-Convenor, Annual Work Plan Committee (Sciences); member of Purchase, Garden and Student Attendance Monitoring Committees.
- Member, Academic Council, University of Delhi (documented tenure 2019-2023).
- Earlier assignments: Convenor, Admission Workload and Planning Committee (2017-2019); Admission Coordinator, B.Sc. Programme Life Sciences (2015-2016); Member, Science Time-table Committee (2015-2017); Convenor, Cultural Committee (2013-2015).

NCC, STUDENT DEVELOPMENT AND OUTREACH

- Organized a national-level Kargil Vijay Diwas quiz and a five-day NCC-Atma Nirbhar Bharat Abhiyaan e-camp in 2020.
- Contingent Commander, Senior Division Cadets of 1 Delhi Air Squadron (Flying) NCC, All India Vayu Sainik Camp, Jodhpur, 15-26 October 2016.
- Mentored undergraduate students and contributed to Botanical Society ‘Vrinda’ activities, alumni lectures, academic webinars, wetland conservation events and virtual field learning.

PROFESSIONAL DEVELOPMENT

- FDP on Environment Sciences & Public Health, Kirori Mal College/University of Delhi with Mizoram University, 1-5 February 2022.
- FDP on Biostatistics: Theoretical and Practical Aspects, Deen Dayal Upadhyaya College, 14-18 March 2018.

- Refresher Course in E-Learning and Digital Learning, HRDC, University of Delhi, 5-25 September 2017.
- STEM Teacher Training Workshops on Research-Based Pedagogical Tools, IISER Pune (March 2017) and IISER Mohali (January 2017).
- National Workshop on Ecology: Modern Perspectives, 12-13 December 2016; participated in panel discussion.
- 14th Foundation Course for Scientists and Technologists, DST/IIPA, 17 November 2014-6 February 2015; UGC-funded Orientation Programme, Himachal Pradesh University, 14 April-10 May 2014.
- Plant Proteomics Workshop, University of Delhi, 26-30 December 2013; Computational Biology workshop for science teachers, Miranda House, 9-11 January 2012.

SELECTED CONFERENCES AND WORKSHOPS

- ENCON 2017: Environment & Ecology—Sustainability and Challenges, New Delhi, 2-4 January 2017.
- Indo-Swiss Collaboration in Biotechnology conference on bioremediation strategies, University of Delhi, 9-11 February 2011.
- National Symposium on the Genomic Age and Indian Pteridophytes, Botanical Survey of India/Indian Fern Society, Pune, 3-4 March 2017.
- National Seminar on Analytical Techniques in Biological & Environmental Sciences, Kirori Mal College, 27-29 January 2011; National Symposium on Frontiers and Avenues in Plant Sciences, Shivaji College, 20-21 January 2011.

WORKSHOPS ORGANISED

- Organized workshop on Applied Genomics & Proteomics, Deshbandhu College, 12-14 March 2014.
- Deputy Coordinator, INSPIRE Internship Programme, Deshbandhu College, in collaboration with DST, Government of India (2012, 2013, 2014 and 2015).

PROFESSIONAL MEMBERSHIPS AND ADDITIONAL QUALIFICATIONS

- Life Member: Indian Institute of Public Administration; Indian Association of Biology Teachers; International Association of Bryology; Indian Fern Association; International Association of Environmental Botanists.
- Basic Mountaineering Course-244, Nehru Institute of Mountaineering, Grade A (13 September-10 October 2016).
- Yoga Science Camp, Patanjali, Haridwar (5-11 June 2016).

PROFESSIONAL LINKS

- Google Scholar: https://scholar.google.com/citations?user=ee6f_fsAAAAJ&hl=en
- ORCID: <https://orcid.org/0000-0002-6275-548X>
- ResearchGate: https://www.researchgate.net/profile/Kumar-Shantanu?ev=hdr_xprf
- LinkedIn: <https://www.linkedin.com/in/profkumarshantanu>
- Himalayan Study Circle: <https://www.himalayanstudycircle.org/>

Contact: kshantanu@db.du.ac.in | Department of Botany, Deshbandhu College, University of Delhi, Kalkaji, New Delhi - 110019