Curriculum vitae

Name Sudeshna Mazumdar-Leighton

Date of Birth 21st September 1968

Contact Address Dept. of Botany, Delhi University, Delhi-7

Ph: 9810190756, Email: smazumdar@botany.du.ac.in

Website: www.sml-botanydu.com

Research Interests *Interactions of Plants with their Biotic Environments, *Sustainable biotechnologies for sericulture, insect pest management, virus-resistant plants and restoration of degraded environments

Educational qualifications

- B. Sc. (Botany) at Miranda House, Delhi University, India (1986-1989)
- M. Sc. (Genetics) at South campus, Delhi University, India (1989-91)
- Ph.D. (Botany) from Delhi University, India (1991-96) with Thesis research at International Rice Research Institute, Philippines (1993-95)

Professional experience

- Post-doctoral fellow & Research associate (January 1996- January 2003) at Depts. of Entomology & Plant Pathology, Cornell University, NYSAES, Geneva, NY, USA;
- Reader & Associate Professor (January 2003-January 2011), Department of Botany, Delhi University, Delhi-7
- Professor (January 2011-till date), Department of Botany, Delhi University, Delhi-7

Publications

1. Sudeshna Mazumdar-Leighton, Cheerukeri Raghavendra Babu and John Bennett (2000) "Identification of novel serine proteinase gene transcripts in the midgets of two tropical insect pests, Scirpophaga incertulas (Wk.) and Helicoverpa armigera (Hb.)" Insect Biochemistry and Molecular Biology 30 (1): 57-68.
2. GA Fermin-Munoz, B Meng, K Ko, S. Mazumdar-Leighton, A Gubba and JE Carroll (2000), "Biotechnology: A new era for Plant Pathology and Plant Protection" www.apsnet.org/online/feature/Biotechnology.html
3. Sudeshna Mazumdar-Leighton and Roxanne M. Broadway (2001) "Identification of six chymotrypsin cDNAs from larval midguts of Helicoverpa zea (corn earworm) and Agrotis ipsilon (black cutworm) feeding on the soybean trypsin inhibitor" Insect Biochemistry and Molecular Biology 31 (6/7): 633-644.
4. Sudeshna Mazumdar-Leighton and Roxanne M. Broadway (2001) "Transcriptional induction of diverse midgut trypsins from larval Helicoverpa zea (corn earworm) and Agrotis ipsilon (black cutworm) feeding on the soybean trypsin inhibitor)" Insect Biochemistry and Molecular Biology 31 (6/7): 645-657.
5. DA Shah, HR Dillard, S Mazumdar-Leighton, D Gonsalves and B Nault, (2006), "Incidence, Spatial patterns, and Associations among Viruses in Snap Bean and Alfalfa in New York", Plant Disease, 90:203-210.
6. A Bhattacharyya, S. Mazumdar, S Mazumdar-Leighton and CR Babu, (2006), "A Kunitz proteinase inhibitor from *Archidendron ellipticum* seeds: Purification, characterization, and kinetic properties", Phytochemistry 67:232-241.

7. A Bhattacharyya, S Mazumdar Leighton and CR Babu, (2007), "Bioinsecticidal activity of *Archidendron ellipticum* trypsins inhibitor on growth and serine digestive enzymes during larval development of *Spodoptera litura*", Comp. Biochem. Physiol. C. Toxicol. Pharmacol., 145(4):669-677.
8. A Bharadwaj*, S Leelavathi, S Mazumdar-Leighton, A Ghosh, S Ramakumar and V ShivaReddy, (2008), "The critical role of partially exposed N-terminal Valine residue in stabilizing GH10 Xylanase from *Bacillus* sp. NG-27 under poly-extreme conditions", PLoS One, 3(8):e3063.
9. A Bharadwaj*, S Leelavathi, S Mazumdar-Leighton, A Ghosh, S Ramakumar and V ShivaReddy, (2010), "The critical role of N- and C-terminal contact in protein stability and folding of a family 10 Xylanase under poly-extreme conditions", PLoS One, 5(6):e11347.
10. B Oppert, EN Elpidina, M Toutges and S Mazumdar-Leighton, (2010), 'Microarray analysis reveals strategies of *Tribolium castaneum* larvae to compensate for cysteine and serine protease inhibitors' Comp Biochem Physiol Part D Genomics Proteomics Aug 13 (Epub ahead of print) Also *see http://www.journals.elsevier.com/comparative-biochemistry-and-physiology-part-d-genomics-and-proteomics/most-cited-articles/*
11. M Saikia*, YT Singh*, A Bhattacharya and S Mazumdar-Leighton, (2010), 'Expression of diverse midgut serine proteinases in the sericigenous Lepidoptera *Antheraea assamensis* (Helfer) is influenced by choice of host plant species' Insect Molecular Biology 21st September 2010 (Article online ahead of print). *Selected by Journal for Open Access in Virtual Issue XXIV International Congress of Entomology 2012 and cited as a "sample…demonstrating the strength and scope of research ….emanating from Asia".*
12. P Singh-Pant*, P Pant*, SK Mukherjee and S Mazumdar-Leighton, (March 2012), 'Spatial and temporal diversity of begomovirus complexes in papayas with leaf curl disease' Archives of Virology 157:1217-1232.
13. YT Singh*, S Mazumdar-Leighton, M Saikia*, P Pant*, S Kashung*, K Neog, R Chakravorty, S Nair, J Nagaraju, CR Babu, (November 2012), "Genetic variation within native populations of Antheraea assamensis (Helfer) from Northeast India indicates need for *in situ* conservation" PLoS ONE 7(11):e49972.
14. "Loktak: the largest floating lake of the world needs restoration" (Jan 2013), YT Singh, S. Mazumdar-Leighton and S. Nair, Current Science, 104: 10. http://www.currentscience.ac.in/Volumes/104/01/0010.pdf
15. U Bhardwaj*, A Bhardwaj*, R Kumar*, S Leelavathi, V SivaReddy and S Mazumdar-Leighton (11 Dec 2013) "Revisiting Rubisco as a protein substrate for insect gut proteases." Archives of Insect Biochemistry and Physiology, available on-line, 13th December 2013, DOI: 10.1002/arch.21140.
16. Kumar R*, Bhardwaj U*, Kumar P* and S Mazumdar-Leighton (March 2015) "Midgut serine proteases and alternative host plant utilization in *Pieris brassicae* L." Front. Physiol. **6**:95. doi: 10.3389/fphys.2015.00095, epub 31st March 2015.
17. "Metagenomics at Grass Roots" (March, 2017), VK Choudhary and S. Mazumdar-Leighton, Resonance, 22nd March 2017 special issue on Women in Science, **22**, pages 291–301. https://doi.org/10.1007/s12045-017-0461-6
18. Kumar P*, Akhter T*, Bhardwaj P*, Kumar R*, Bhardwaj U* and S Mazumdar-Leighton (20 January 2021) "Consequences of 'no-choice, fixed time' reciprocal host plant switches on nutrition and gut serine protease gene expression in *Pieris brassicae* L. (Lepidoptera: Pieridae) PLOS ONE 16(1): e245649. https://doi.org/10.371/journal.pone.0245649
19. R Anand*, SP Singh, N Sahu, YT Singh*, S. Mazumdar-Leighton, S Nair, J Bentur and S. Nair (2 November 2022) Polymorphisms in the hypervariable control region of

mitochondrial DNA differentiate BPH populations, 2-22: Frontiers in Insect Science (Insect Molecular Genetics) https://doi.org/10.3389/finsc.2022.987718

20. "Insect Migration: Going places" (January 2023), T Akhter, P Kumar and S. Mazumdar-Leighton, Resonance, 28(1), pages 71-84.
21. V.K. Choudhary*, P. Bhardwaj*, P.K. Kar, S. Mazumdar-Leighton and C.R. Babu (May 2023) Development of novel Tasar cultivation zones and conservation of Vanya silkworms in ecologically-restored sites within degraded mined-out areas of Purnapani, Odisha, Journal of Environmental Biology (Vanya Sericulture Special Issue, CTR&TI, CSB), 44(3): 505-513: http://doi.org/10.22438/jeb/44/3(SI)/JEB-18
22. P. Bhardwaj*, V.K. Choudhary*, M.S. Alam, S. Acharyya, S. Mazumdar-Leighton and C.R. Babu (May 2023) Temporal variability in foliar protein content and trypsin inhibitory levels in two host trees of tropical Tasar silkworm Antheraea mylitta, Drury. Journal of Environmental Biology (Vanya Sericulture Special Issue, CTR&TI, CSB), 44 (3), 415-424: http://doi.org/10.22438/jeb/44/3(SI)/JEB-14
23. S. Kashung*, P. Bhardwaj*, M. Saikia* and S. Mazumdar-Leighton (10 August 2023) Midgut serine proteinases participate in dietary adaptations of the castor (Eri) silkworm, *Samia ricini* Anderson transferred from *Ricinus communis* to an ancestral host, *Ailanthus excelsa* Roxb. Front. Insect Sci. 3:1169596. doi: 10.3389/finsc.2023.1169596
24. R. Anand, D. Divya, S. Mazumdar-Leighton, J. S. Bentur, and S. Nair (September 2023) Expression Analysis Reveals Differentially Expressed Genes in BPH and WBPH Associated with Resistance in Rice RILs Derived from a Cross between RP2068 and TN1. International Journal of Molecular Sciences, 24(18): 13982. https://doi.org/10.3390/ijms241813982
25. "The Sublime Art of War: Herbivore induced plant volatiles" (January, 2024; online 2023), A Mehra and S. Mazumdar-Leighton, Resonance, 29 (1), pages 29-49. https://doi.org/10.1007/s12405-024-1736-3.
26. N. Seth, S, Vats, S. Lakhanpaul, Y. Arafat, S. Mazumdar-Leighton, M Bansal* and C.R. Babu (18 March, 2024) Microbial community diversity from an integrated constructed wetland used for treatment of sewage, Frontiers in Microbiology (Aquatic Microbiology) Volume 15 - 2024 | https://doi.org/10.3389/fmicb.2024.1355718
27. U Rathi**, A Gupta, P Joshiya Pradhan, A Choudhary, BL Patil, S. Mazumdar-Leighton, and MV. Rajam (2024) An improved plant regeneration protocol for a popular Indian *Madhubindu* variety of papaya (*Carica papaya* L.) via somatic embryogenesis, Vegetos online (July 2024) https://doi.org/10.1007/s42535-024-00971-8
28. M. Bansal*, N. Seth, C.R. Babu, S. Mazumdar, S. Mazumdar-Leighton (2024) Characterisation of microbial communities in the sewage of a major drain, Journal of Water and Health (accepted 20th September, 2024; online 1st October 2024), J Water Health, 22 (10): 1922–1941 https://doi.org/10.2166/wh.2024.212
29.

*Former and current Ph.D. scholars from my lab

Book Chapters

1. "Tomato Yellow Leaf Curl" by C-L Hamilton, S Mazumdar-Leighton, I Amarakoon and M Roye (2015) in 'Virus Diseases and Tropical and Subtropical Crops' eds. P. Tennant and G. Fermin, CAB International 2015 pp. 177-188.
2. "Viruses of Prokaryotes, Protozoa, Fungi and Chromista" by G Fermin, S Mazumdar-Leighton and P Tennant (2018) in 'Viruses 1st edition Molecular biology, Host

interactions and Application to biotechnology' eds. P. Tennant, G. Fermin and J Foster, Elsevier, Academic Press

3. "Transgenic virus-resistant papaya: current status and future trends: by G Fermin, P Tennant and S Mazumdar-Leighton (2018) in 'Genes, genetics and Transgenics for Virus resistance in plants' ed. BL Patil, Caister Academic Press, UK

Completed Research Projects & Scholars guided

- Two completed Research Projects funded by Department of Biotechnology, Government of India, on:
  (1) Genetic Diversity of *A. assamensis* silkmoths from NE India (P.I. in collaboration with CMERTI, CSB, Assam) Output: See www.mugadbase.com

  (2) Restoration ecology program on Mined areas (Co-PI)

- Intra-mural DU-DST purse Grant on crucifer pest complexes (Individual PI) See http://www.youtube.com/watch?v=AAP2y-xcbM8

  On going Research project funded by Department of Biotechnology, Government of India "CRISPR/Cas9 mediated control of the Geminiviruses involved in Papaya leaf curl disease"

- Guided 14 Ph.D. students: Dr. Mahaswetta Saikia (2008); Dr. Amit Bhardwaj (2008); Dr. YT Singh (2009); Dr. Rakesh Kumar (2009); Dr. Pratibha Singh (2011); Dr. Usha Rani (2012); Dr. Prashant Pant (2014); Dr. Vivek Choudhary (2016); Dr. Sochanngam Kashung (2018), Dr. Pawan Kumar (2019), Dr. Tabasum Akhter (2021), Dr. Parul (2023), Dr. Rashi Anand (2023), Dr. Aashima Mehra (2024),

- Guiding six Ph.D. scholars (2 funded by CSIR, 4 by UGC),

- Guided 3 M. Phil. Students

Recent Conference papers & posters

- Bansal M, Seth N, Babu, CR, Mazumdar-Leighton, S (December 3-8, 2023). "Characterization of microbial communities in a major sewage drain in Delhi –NCR, India." Poster presentation (Online) at International Water Association Specialist Conference on Water and Wastewater Management with special focus on Developing Countries. Organized by IWA at Murdoch University, Australia
- Mate K. T., Bansal, M., Tennant, P., Mukherjee, S., Mazumdar-Leighton, S. (November 13-16, 2022) "Detection of Begomoviruses and associated satellites in viruliferous whiteflies for surveys of leaf curl disease in feral papaya and non-papaya hosts." Poster presentation (Virtual) at Entomology 2022, Vancouver, Canada.
- Mate K. T., Anand R., Bansal, M., Srivastava, S., Mehra, A., Bhardwaj, P., Singh-Pant, P., Pant, P., Tennant, P., Mukherjee, S., Mazumdar-Leighton, S. (November 9-10, 2022) "Serological and molecular detection of whitefly transmitted single stranded DNA Begomoviruses in symptomatic plant samples from University of Delhi." Poster

presentation at National Symposium on Recent Developments in Plant Sciences for a Resilient Future organized by Delhi University Botanical Society, Department of Botany, University of Delhi.

- Choudhary, V.K., Parul, Kar, P. K., Mazumdar-Leighton, S., and Babu, C. R. (October 28-29, 2022) "Development of novel Tasar cultivation zones and conservation of Vanya silkworms in ecologically-restored sites within degraded mined-out areas of Purnapani, Odisha" Oral presentation at National Symposium on Vanya Sericulture: Opportunities Galore 2022 under the theme "Conservation, improvement and rearing management in Vanya silkworms" Conference organized by CTR& TI, Ranchi.
- Parul*, Choudhary V.K*., Alam, S., Acharyya, S., Mazumdar-Leighton, S., Babu C.R. (October 28-29, 2022) "Temporal variability in total protein content and trypsin inhibitory levels in leaves of Terminalia arjuna (Roxb.) Wight and Arn.; A primary host plant of the tropical tasar silkworm Antheraea mylitta, Drury." Oral presentation at National Symposium on Vanya Sericulture: Opportunities Galore 2022 under the theme "Recent Advances in Improvement and Management of Host Plants of Vanya Silkworms", Conference organized by CTR& TI, Ranchi.
- Mehra, A*., Dombroskie, J., Babu, C.R., Mazumdar-Leighton, S., (October 31 - November 3, 2021). "Identification of serine proteases in Gracillariid leaf miners and role of foliar serine protease inhibitors in *Millettia pinnata* (L.) Panigrahi, a biofuel crop." Poster presentation (Virtual) in the Entomology 2021, Denver, Colorado, USA.
- Mazumdar-Leighton, S., Mehra, A., Bhardwaj, P., (December 11-12, 2020). "Evolution of Polyphagy in Lepidoptera: an ongoing saga." Invited talk (virtual) at Entomology 2020: Beyond COVID-19 organized by PJTSAU, Hyderabad.
- Bhardwaj, P., Mazumdar-Leighton, S., Acharyya, S., Narain, N., Alam, M. S., Babu C. R., (November 11-30, 2020). "Prevalence of *Nosema* sp. in wild populations and commercialized stocks of *Antheraea mylitta* the tropical Tasar silkworm of India." Oral presentation at Entomology 2020, (Virtual Conference organized by ESA)
- Akhter, T., Kumar, P., Mazumdar-Leighton, S. (November 17-20, 2019). Influence of host plants on nutrition and gut proteolytic digestion in two populations of *Pieris brassicae* L. from Kashmir and Delhi, India. Poster presented at Entomology 2019, St. Louis, MO.
- Akhter, T., Kumar, P., Kumar, R., Mazumdar-Leighton, S. (November 10-14, 2019). Role of plant protease inhibitors in herbivory by *Pieris brassicae* L. (Lepidoptera: Pieridae) feeding on *Brassica oleracea* L. var. botrytis and/or *Tropaeolum majus* L. Poster presented at IPPC 2019, Hyderabad, India
- Bhardwaj, P., Babu, C. R., Acharyya, S., Alam, M. S., Mazumdar-Leighton, S. (November 17-20, 2019) PCR-based Detection of *Nosema* sp. in Commercial Tasar Silkworm *Antheraea mylitta* from Central India. Poster presented at Entomology 2019, St. Louis, MO
- Mate K. T., Mehra, A., Bhardwaj, P., Bansal, M., Akhter, T., Singh-Pant, P., Pant, P., Mukherjee, S., Mazumdar-Leighton, S. (November 9-13, 2019) Monitoring leaf curl disease complexes associated with whitefly-transmitted Begomoviruses infecting Papaya in Delhi NCR, India: Results from a long-term survey. Poster presented at the 9th International Geminivirus Symposium and 7th International ssDNA Comparative Virology Workshop, UC, Davis.
- Kashung, S., Kumar, P., Bhardwaj, P., Mehra, A., Akhter, T., & Mazumdar-Leighton, S. (November, 2018). Sequence Analyses of Lepidopteran Serine Proteases and Identification of Lineages Likely Associated with Adaptations to Herbivory. Poster presented at the 2018 ESA, ESC, and ESBC Joint Annual Meeting, Vancouver, Canada: BC.

- Kumar, P., Kumar, R., Akhter, T., Mazumdar-Leighton, S. (November 11-14, 2018) Host plant switch affects the life history, growth and proteolytic digestion in *P. brassicae* L. (Lepidoptera: Pieridae). Poster presented at the 2018 ESA, ESC, and ESBC Joint Annual Meeting, Vancouver, Canada: BC
- Invited Public lecture on "Plant-Insect Interactions" at IASST, Guwahati (2018)
- Kashung, S., Bhardwaj, P., Saikia, M., & Mazumdar-Leighton, S. (November, 2017). Midgut trypsins participate in adaptation of the Indian 'Eri' silkworm, *Samia ricini* Anderson to host plants *Ricinus communis* L. and *Ailanthus excelsa* Roxb. Poster presented at Entomology 2017: Ignite. Inspire. Innovate., ESA's 65th Annual Meeting, Denver, Colorado: CO
- Mehra, A., & Mazumdar-Leighton, S. (December, 2017) Genetic variation and its implications for a local population of Pongam oil tree *Derris indica* (Lam.) Bennet (syn. *Millettia pinnata* (L.) Panigrahi; *Pongamia pinnata* (L.) Pierre) Poster presented at the 27th Conference of the Indian Association for Angiosperm Taxonomy & International Symposium on "Plant Systematics: Priorities and Challenges", New Delhi.
- Hamsa, S., Akhter, T., Bhardwaj, P., Mehra, A., Mukherjee, S., Mazumdar-Leighton, S. (November 7-10, 2016). Understanding persistence and evolution of begomoviruses infecting feral papaya and solanaceous weeds by epidemiological screenings. Poster presented at the 8th International Geminivirus Symposium & 6th International ssDNA Comparative Virology Workshop, New Delhi.
- Lead talk titled "Monitoring Leaf Curl Disease incidence and begomoviral sequence diversity in cultivated and feral Papaya growing in New Delhi and Haryana" at 8th International Geminivirus Symposium, November 7th, 2016, at New Delhi, India. Authors- Pratibha Singh-Pant, Prashant Pant, S. Hamsa, Tabasum Akhter, Parul Bhardwaj, Aashima Mehra, Sunil Mukherjee and Sudeshna Mazumdar-Leighton
- Public lecture entitled "The very hungry caterpillar: Insect-Plant interactions and the giant silkmoths of NE India" Science & Society lecture at India International Centre, Delhi, 2015 (available on podcast)
- Pant, P., Chaudhary, V. K., Mazumdar-Leighton, S., Babu, C. R. (November 15-18, 2015) Application and limitations of 28S rRNA gene sequences for monitoring below ground diversity at degraded mine sites understanding eco-restoration at Purnapani, Odisha, India. Poster presented at the Annual Meeting of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America with the Entomological Society of America, Minneapolis, MN
- Pant, P., Chaudhary, V. K., Mazumdar-Leighton, S., Babu, C. R. (December, 2015) 16S rRNA gene family based microbial typing of rhizospheric communities of a native legume *Alysicarpus vaginalis* (L.), fam. Fabaceae. Poster presented at the International Conference on Ecology of Soil Microorganism, Prague, Czech Republic
- Bhardwaj, U., Bhardwaj, A., Kumar, R., Leelavathi, S., Reddy V.S., Mazumdar-Leighton, S. (March 7-10, 2014) Towards developing Rubisco as a physiologically relevant substrate for measuring herbivory. Poster presented at the International Symposium on Plant Signaling and Behavior, New Delhi.
- Public lecture on "Multiple Dimensions of the Biotic Environment of Plants" at DS Kothari Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, at INSPIRE Internship program, 16th December 2013
- Public lecture entitled "On the wings of a golden silk moth" for the Delhi University Lecture Series 2010
- Paper entitled "Understanding the biology of plant interactions with the biotic environment: applications to food security" at an event on "Global food security" organized by University of Nottingham, Ningbo, China, at Shanghai Expo 2010.

Journal related activities

- Member, Editorial Board, (2015-Dec 2020) Resonance, a journal for Science communication, Indian Academy of Sciences, Springer

Popular articles/Website

"Rabha's weave" (2008), S. Mazumdar-Leighton, www.mugadbase.com

Presentations/Workshops/Public outreach activities

- YouTube Lecture (3 parts) on Plant Biotic Interactions for Faculty Development Program in Higher Education (Life Sciences) 2021 organized by Miranda House and Ramanujan College, University of Delhi, for University Grants Commission, Government of India
- Invited Public lectures on selected topics in Biotechnology and Bioinformatics for undergraduate students at Miranda House (2004, 2005, 2009, 2010, 2013, 2018, 2021, 2023, 2024), Gargi College (2004), Maitreyi College (2006), Dyal Singh College (2007), Acharya Narendra Dev College (2008), Kirori Mal College (2008; 2018, 2021: YouTube), Bal Bharti Public School (2006), Haryana Agricultural University (2008), Hindu College (2009); Daulat Ram College (2012); Hans Raj College (2012); Bhaskaracharyaa College for Applied Sciences (2021); Deshbandhu College (2023), Shivaji College (2025)
- Invited lectures at Bal Bharti (2009), DPS Mathura Road (2015), Carmel Convent (2015) and Presentation Convent; Judge at national level competitions for school students (10+2 level) at National Science Centre; KVPY, IISc (2013-till date)
- Inaugural lectures and Hands-on workshops on Biotechnology related topics for DBT Star programs at Daulat Ram College (2012), Miranda House (2016, 2017, 2018), Kirori Mal College (2018)
- Invited lectures as Resource person for All India Co-ordinated program on plant taxonomy at CEMDE, DU (2009, 2010, 2011), National Institute of Plant Genetic Resources, New Delhi (2010); DU-CPDHE-sponsored refresher courses for college teachers (2004, 2008, 2009, 2011, 2014)
- Public lecture entitled "On the wings of a golden silk moth" for the Delhi University Lecture Series 2010
- Public lecture entitled "The very hungry caterpillar: Insect-Plant interactions and the giant silkmoths of NE India" Science & Society lecture at India International Centre, Delhi, 2015 (available on podcast)
- Invited Public lecture on "Plant-Insect Interactions" at IASST, Guwahati (2018)
- Faculty at *Universitas 21* summer school at University of Nottingham, Ningbo, China, lecture on "Mitigating Global food insecurity: Green Revolution and GMOs" July 2010
- Reviewed manuscripts for Oecologia (2010), Journal of Plant Physiology (2010), Insect Biochemistry & Molecular Biology (2001, 2002), Comparative Biochemistry and Physiology (2002), Plant Science (2003), Peptides (2009), Journal of Insect Physiology (2010), Insect Molecular Biology (2011); Archives of Insect Biochemistry and Physiology (2011); Woodpecker Journals (2012-2014); African Journal of Biotechnology (2012-14); Current Science (2003- 2011), Molecular Biology Reports (2014), ongoing

- Reviewer for Grant proposals to Department of Biotechnology, Government of India (2010; 2011; 2012); Ministry for Environment and Forests, Government of India (2010, 2022; 2023; 2024).
- Reviewer for USDA (New Research Initiative Competitive Grants) Grant applications 1998, 1999, 2000, 2003.
- Developed exhibit and posters on "The GMO debate" for Cornell University Community Education effort.
- Presented Paper and Poster at Entomological Society of America (ESA) annual meetings in 1997, 1998 & 2000 & Joint US-Canadian Meeting on PPV in 2002 (see archives at www.entosoc.org for details).
- Judged Students Posters at ESA annual meetings 1998 and 1999.
- Taught molecular biology tools to ARBN (Asian Rice Biotechnology Network) trainees, at Intnl Rice Research Institute (IRRI), Philippines, 1993-1995.
- Assisted at 1992 workshop titled "Molecular basis for pest and disease resistance" at Intnl. Center for Gen. Engineering & Biotechnology (ICGEB), New Delhi.

University Services

- Warden (2003-2005) at Meghdut Hostel, University of Delhi (for 100 women scholars) under the provost-ship of Professor Rama Mathews. We introduced a first computer room with three machines for students, a first washing machine cum dryer room for residents and renovated the kitchen facilities.
- Volunteer Judge for various events of Quest, an inter-college under-graduate Science quiz competitions organized by CSEC, University of Delhi, 2003-2015. Contacted by Profs. Amitabh Mukherjee, HP Singh and MM Chaturvedi
- Participated in Science outreach efforts for Delhi University Community Radio (DUCR 90.4 FM) 2010 and 2011. Contacted by Dr. Vijaylakshmi Sinha
- Faculty accompanying 5 under-graduate students to *Universitas* 21 summer school at University of Nottingham, Ningbo, China in 2010 (sponsored by CSEC, University of Delhi).
- Member and enthusiast of the Delhi University Flower Show Committee (2003-2011, 2017-2018)
- Secretary (First female appointee), University Garden Committee (April 2018 -July 2022), Responsible for University gardens and Malis
- Member of the Core committee, Delhi University Library System (2004-6)

Professional Services

- Instrumentation Resource Lab for Bio-Rad (India) Incorporated.
- Molecular Biology Resource Person for "Pradan", an NGO-based in Ranchi, Jharkhand, engaged in providing alternate livelihood practices to rural farming communities (2004-2011) Contacted by Mr. Satyabrata and Mr. Binju Abraham
- Member of the Scientific Advisory Committee of IBSD (Institute for Biodiversity and Sustainable Development) at Imphal, Manipur (2010-2013).
- Member to Project Advisory Committee of NBSFARA 2013-2016, ICAR
- Member, Scientific Advisory Committee, Centre for Urban Ecosystems & Sustainability, Ambedkar University of Delhi (2015-2018)
- Treasurer and Member, Governing Body of Bhaskaracharya College of Applied Sciences, (Accreditation: A), University of Delhi (2016-2018)

- Member, Governing Body of Miranda House (Accreditation: A++), University of Delhi (2020-2022)
- Member, Governing Body of Ram Lal Anand College, University of Delhi (2020-2022)
- Member, Governing Body of Jesus and Mary College, (Accreditation: A++), University of Delhi (2021-2023)
- Chairperson and Member, Governing Body of Acharya Narendra Dev College (Accreditation: A+) University of Delhi (2022-2024)

Memberships held

* Sigma Xi honor society (Geneva, NY chapter) *Entomological Society of America *American Phyto-pathological Society *Organic Farmers Association (New York) *Delhi University Botanical Society (Life member) *Indian Virological Society (Life member)

Scholastic/Academic awards

1. The Distinguished Alumna Award 2017 from Miranda House Alumnae Association, Delhi University
2. Felicitated as the Illustrious Alumna Award, 2023, from Miranda House, Delhi University
3. Nominated to American Sigma Xi Honor Society (Sciences) in 1999
4. GATE/NET qualified (1990-1992) percentile 99.85.
3. CSIR Junior Research Fellowship, Govt. of India (1990-1995)
4. Outstanding Merit Scholarship for University rank in B. Sc (1989-1991)
5. Best Paper presentations on “Biotechnology and Indian development”, “Bioenergy and Indian development” and “Conservation of wildlife, our evolutionary responsibility” at Prof. BM Johri paper presentation competitions, Dept. of Botany, Delhi University (1987-89)
6. Ambassador Chatwal’s Scholarship for Scholastic achievement, New Indian School of Kuwait (classes 8, 9, and 10)

Language skills

English, Hindi, Bengali, French, working knowledge of Arabic and Nihongo

Hobbies

Poster painting, Flower arrangement, Yoga, and playing Hawaiian guitar