

Veena Beri, Ph.D.

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Summary

Plant biochemist with 7 years (Ph.D + PDF) of extensive research experience in the field of biochemistry focussed on acetylcholine (ACh), acetylcholinesterase (AChE) and anticholinesterases (antiChEs) along with 11+ (11 years, 9 months and 19 days) of teaching experience. Research experience involves the study of mechanism of action of ACh in plants coupled with the extensive screening of plants for the presence or absence of AChE modulators along with their isolation and purification. Studies also involves the culturing of human AChE along with its purification. I have had the privilege of learning and getting extensive exposure in the field of enzyme kinetics with world renowned enzyme kineticist Professor Terrone L. Rosenberry at Mayo Clinic (USA) for a couple of years, with whom I have published three research papers in peer reviewed international journals of repute.

- **5+2 years of research experience (India, USA)**
- ✓ Experience in screening for peripheral or P-site and active or A-site inhibitors of acetylcholinesterase (AChE) with the aim to screen drugs that prevent AChE inactivation by organophosphates (OPs) while still providing for the hydrolysis of acetylcholine (ACh) by AChE
- ✓ Experiments also performed for obtaining new mechanistic information about the role of P-site of AChE using two novel substrates (acetyl-homothiocholine and acetyl-northiocholine) of AChE
- ✓ Rich experience and strong domain expertise in screening plant extracts for the presence and absence of AChE and its modulators
- ✓ Isolation and partial purification of enzymes (like ChE)
- ✓ Extraction, isolation and purification of secondary metabolites
- ✓ Research and Technical Expertise involves handling instruments like UV-spectrophotometer, Column Chromatography (CC), High Performance Liquid Chromatography (HPLC), Gas Liquid Chromatography (GLC), Thin Layer Chromatography (TLC), Fluorometer and Stop flow coupled with Fluorometer; Gel permeation
- ✓ Enzyme Kinetics
- ✓ Culturing human AChE
- ✓ Computer skills involve platforms like MS-DOS, UNIX, LINUX, Windows 95, Windows 98, Windows 2000 & Windows XP and software like Chem. Office, MS Office Suite & Sigma Plot
- ✓ Proven problem solving capabilities
- ✓ Enthusiastic researcher, a positive team worker with excellent organizational, communication and creative skills
- **10+ years of teaching experience at the University of Delhi** (Taught at Miranda House, St. Stephen's College, Sri Aurobindo College (Evening), Daulat Ram College, Maitreyi College, Acharya Narendra Dev College, Keshav Mahavidyalaya, Shivaji College, Kirori Mal College, Sri Aurobindo College (Morning), Gargi College, Dyal Singh College and Shyam Lal College)

Education

Post Doctoral Fellowship (Enzyme Kinetics) - Mayo Clinic, Jacksonville, Florida, USA (27 September, 2010-20 May, 2012)

Project 1: New inhibitors of acetylcholinesterase (AChE) that block inactivation by organophosphates (OPs)

- Brief description: We proposed to design compounds that bind tightly to the P-site and in order to discriminate between access of acetylcholine (ACh) versus inhibitors to the active site. In particular, such compounds must exclude OPs from the active site while interfering minimally with the passage of ACh. The effect of naturally occurring inhibitors of AChE such as dihydrotanshinone, a natural diterpenoid obtained from the plant *Salvia miltiorrhiza*, aflatoxin B1, a mycotoxin obtained from *Aspergillus flavus* and *A. parasiticus*, and territrein B, a tremorgenic mycotoxin isolated from *A. terreus* was studied in an inhibitor competition assay to determine whether they bind specifically to the P-site.
- Result: We measured the respective inhibition constants K_I of 770 nM, 30 μ M, and 2 nM for these inhibitors and determined that dihydrotanshinone 1 and aflatoxin B1 bound specifically to the P-site while territrein B bridged both the P- and A-sites. These inhibitors will serve as lead compounds in identifying additional ligands that may be selective in blocking access of OPs to the A-site of AChE. X-ray crystallographic evidences further support the findings.

Project 2: The rate-limiting step for the second-order hydrolysis of many substrates by acetylcholinesterase (k_{cat}/K_M) is a gated entry to the catalytic triad

- Brief description: AChE contains a narrow and deep active site gorge with two sites, A or an acylation site containing the catalytic triad at the base of the gorge and P or a peripheral site near the gorge entrance, for ligand binding. The P-site has been reported to contribute to catalytic efficiency by transiently trapping the substrate in a low affinity complex on its way to the A site, where a short-lived acyl enzyme intermediate is produced. Does the P site simply trap the substrate or provide the selective gating for the entry of substrate to the A site?
- Result: We determined that the P-site selectively gates for the entry of substrates such as AcSCh (chromogenic structural acetylcholine analog) relative to the structural analogs acetyl-homothiocholine (Ac-hSCh, which adds one additional methylene group to thiocholine) and acetyl-northiocholine (Ac-nSCh, which deletes one methylene group from thiocholine). We synthesized **Ac-hSCh and Ac-nSCh (novel)** and compared their catalytic parameters with AChE to those of AcSCh.

Reason for leaving: Grant got over. Further, I got selected at **Miller School of Miami** where Prof. Rick Rotundo offered me the prestigious position to work under his guidance for five years (2012-17) but unfortunately I could not join as I had to return back to India due to emergency at home.

Doctorate in Philosophy (Botany-Plant Biochemistry) - University of Delhi, India (27 September, 2001-12 August, 2008)

Dissertation: "Studies on Inhibitors and Activators of Acetylcholinesterase and Trypsin in Plant Extracts"

Brief description:

- A. Certain quaternary ammonium compounds (QAC) like AMO-1618 have been found to inhibit the activity of AChE as well as the process of Gibberellic acid (GA) biosynthesis in plants, suggesting a cross interaction between QAC (ACh and antiChE like neostigmine and physostigmine) and GA biosynthesis. Therefore, we studied the effect of ACh and antiChE like neostigmine and physostigmine (a tertiary ammonium compound that behaves as quaternary within the living system) on the process of GA biosynthesis employing appropriate controls.
- B. Screening of economically important plants for the presence or absence of AChE modulators.
- C. Screening of economically important plants for the presence or absence of Trypsin modulators.

Results:

- A. While investigating the effect of antiChE compounds, it was found that neostigmine and physostigmine inhibits the induction of α -amylase production in germinating seeds of barley, *Hordeum vulgare* L. var. Jyoti that provides an interesting lead for further work on ACh-GA cross talks.
- B. AChE modulators can be isolated from both edible and non-edible parts of the plant. Non-edible portions of several plants contained antiChE while few edible parts showed the potential to promote the activity of AChE. Among all the extracts tested, the extract of peel of bulb of *Allium cepa* was found to have the highest antiChE activity.
- C. Edible as well as non-edible parts of several plants acts as storehouse for trypsin modulators.

Master of Science (Botany with specialization in Microbial Genetics and Crop Genetics & Plant Breeding) - University of Delhi, India (July, 1999-June, 2001). Scored First Division (60.2%)

Review: "Molecular Basis of Mutation" under guidance of Prof. V. P. Singh.

Dissertation: "Studies on the biochemical and quantitative genetical aspects in two cultivars of *Vigna radiata*" under guidance of Prof. C.R. Babu, Department of Botany, University of Delhi, Delhi, India

Brief description: It was undertaken with the objectives to assess the variability patterns in adaptive and productive traits at biochemical and morphological levels and to determine the homologies among the cultivars. It involved the study of biochemical variations in terms of activity of nitrate reductase, nitrite reductase, protein estimation, seed protein estimation using Microkjeldahl's method, detection of electrophoretic variation encoding for peroxidases along with the study of several aspects related to quantitative genetics.

Master of Computer Applications – Indira Gandhi National Open University (December, 2000-June, 2003). Scored First Division (60.2%)

Dissertation: "Computerization of Microbiology Laboratory"

It was developed using Visual Basic 6.0 and Oracle 8i as backend.

Certificate in Computing – Indira Gandhi National Open University (December, 1998). Scored First Division (62.7%)

Bachelor of Science (Botany) - University of Delhi, India (July, 1996–June, 1999). **Scored first rank in S.G.T.B Khalsa College** (68.7%)

Publications

- **Cheung, J., Beri, V., Shiomi, K., Rosenberry, T. L. (2014).** Acetylcholinesterase Complexes with the Natural Product Inhibitors Dihydratanshinone I and Territrem B: Binding Site Assignment from Inhibitor Competition and Validation Through Crystal Structure Determination. *Journal of Molecular Neuroscience* 53: 506-10. IMPACT FACTOR 2.89 ISSN 0895-8696
- **Beri, V., Wildman, S. A., Shiomi, K., Al-Rashid, Z. F., Cheung, J., Rosenberry, T. L. (2013).** The natural product Dihydratanshinone I provides a prototype for uncharged inhibitors that bind specifically to the acetylcholinesterase peripheral site with nanomolar affinity. *Biochemistry* 52(42): 7486-99. IMPACT FACTOR 3.377 ISSN 0006-2960
- **Beri, V., Auletta, J. T., Maharvi, G. M., Wood, J. F., Fauq, A. H., Rosenberry, T. L. (2013).** Hydrolysis of low concentrations of the acetylthiocholine analogs acetyl (homo) thiocholine and acetyl (nor) thiocholine by acetylcholinesterase may be limited by selective gating at the enzyme peripheral site. *Chemico-Biological Interaction* 203(1): 38-43. IMPACT FACTOR 2.967 ISSN 0009-2797
- **Beri, V., Gupta R. (2007).** Acetylcholinesterase inhibitors neostigmine and physostigmine inhibit induction of alpha-amylase activity during seed germination in barley, *Hordeum vulgare* var. Jyoti. *Life Sciences* 80(24, 25): 2386-2388. IMPACT FACTOR 2.704 ISSN 0024-3205

Conferences and Presentations:

International:

- **Beri, V. (2019).** Attended 2nd International Conference on *Antimicrobial Resistance, Novel Drug Discovery and Development: Challenges and Opportunity* organized by SRM University, Delhi-NCR, Sonapat, India in association with Royal Society of Tropical Medicine and Hygiene, UK, March, IIT Delhi Campus, Rajiv Gandhi Education City, Sonapat, Haryana-131029, India, March 17-19.
- **Invited by *Clinical Pharmacy, 2014 for Oral Presentation, Track 8: Pharmacy and Medicinal Chemistry: Beri, V. (2014).* Presented work on "Naturally occurring Inhibitors of Acetylcholinesterase that block organophosphate poisoning", 2nd International Summit on Clinical Pharmacy, San Francisco, California, USA, December 2-3.**
- **Beri, V. and Rosenberry, T. L. (2013).** Presented work on "Natural product compounds provide good leads for uncharged inhibitors that bind specifically to the acetylcholinesterase peripheral site", *XIV International Symposium on Cholinergic Mechanisms*, Hangzhou, China, May 5-9.
- **Beri, V. and Rosenberry, T. L. (2012).** Presented work on "Screening for naturally occurring P-site inhibitors of acetylcholinesterase that block organophosphate inactivation", *XI International Meeting on Cholinesterases*, Kazan, Russia, June 4-9.
- **Beri, V., Auletta, J. T., Maharvi, G. M., Wood, J. F., Fauq, A. H. and Rosenberry, T. L. (2012).** Presented work on "The rate-limiting step for the second-order hydrolysis of acetylcholine analogs by acetylcholinesterase (k_{cat}/K_M) is gated entry to the catalytic triad", *XI International Meeting on Cholinesterases*, Kazan, Russia, June 4-9.
- **Beri, V., Auletta, J. T., Maharvi, G. M., Wood, J. F., Fauq, A. H. and Rosenberry, T. L. (2011).** Presented the poster entitled "The rate-limiting step for the second-order hydrolysis of many substrates by acetylcholinesterase (k_{cat}/K_M) is gated entry to the catalytic triad", *22nd Enzyme Mechanisms Conference*, Pete Beach, Florida, USA, January 2-6.
- **Beri, V. (2011).** Attended *Chemical And Biological Defense Science And Technology Conference*, Orlando, Florida, USA, November 15-19.
- **Invited by USAMRICD for Bioscience Review 2010: Beri, V. (2010).** Presented the poster entitled "*Allium cepa* as Storehouse of Chemicals Affecting Acetylcholinesterase Activity from Electric Eel: Coexistence of Cholinesterase and antiChE", *17th Biennial Medical Chemical Defense Bioscience Review*, Baltimore Marriott Hunt Valley Inn 245 Shawan Road Hunt Valley, MD 21031, USA, May 23-27.
- **Beri, V. (2009).** Presented work on "Edible plants as storehouse of chemicals affecting the activity of acetylcholinesterase from electric eel", *10th International Meeting on Cholinesterases*, Sibenik, Croatia, September 20-25.
- **Beri, V. (2009).** Presented work on "Studies on inhibitors and activators of acetylcholinesterase in plant extracts", *American Society of Neurochemistry*, Charleston, South Carolina, USA, March 7-11.

National:

- **Beri, V. (2018).** Attended National Conference on *Technological Empowerment of Women* organized by The National Academy of Sciences, India (NASI), Vigyan Bhawan, New Delhi, India, March, 8-9.
- **Beri, V. (2016).** Presented the paper entitled "Plants as storehouse of naturally occurring inhibitors of acetylcholinesterase that block organophosphate poisoning" in National Seminar on *Emerging Economics and Challenges*

to *Sustainability towards Developing Nations* organized by Sri Aurobindo College, University of Delhi, Delhi, India, March 29-30.

- Thareja, R., **Beri, V.**, Lance, E. and Sharma, N. (2016). **Presented the poster** entitled "Computational Studies of Indian Cassava Mosaic Virus (ICMV) and docking of ICMV with Gold and Silver nanoparticles" in *National Conference on Nanoscience-Opportunities and Challenges* organized by Department of Chemistry, Maitreyi College, University of Delhi, Delhi, India, February 29-30 (**First prize, Poster presentation**).
- Attended "First WDC International Conference on Empowerment of Women in Developing World" organized by Women Development Cell, Shivaji College, University of Delhi, Delhi in collaboration with Women's Studies and Development Centre, University of Delhi and National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India.
- **Beri, V.** (2008). Studies on inhibitors and activators of acetylcholinesterase in plant extracts, *Golden Jubilee Conference on Challenges and Emerging Strategies for Improving Plant Productivity* organized by Indian Society of Plant Physiology and Indian Agricultural Research Institute, Indian Agricultural Research Institute, Delhi, India, November 12-14 (Young Scientist Session).
- **Beri, V.** and Gupta R. (2006). **Presented the poster** entitled "Acetylcholinesterase inhibitors neostigmine and physostigmine inhibit induction of alpha-amylase activity during seed germination in barley, *Hordeum vulgare* var. Jyoti", *74th Annual Meeting of Society of Biological Chemists (INDIA)*, Central Drug Research Institute, Lucknow, India, November 7-11 (Poster presentation).

Webinar organized:

- Member of Organizing Committee for the National webinar on *Tinkering with Plant Genomes* organized by the Department of Botany, Miranda House, University of Delhi, July 6, 2020.

Webinars attended:

International:

- Attended the International webinar on *Towards raising crops for saline and dry lands* organized by Bioingene.com on November 6, 2020.
- Attended the International webinar on *Advancements in Biological Sciences and Career Opportunities* organized by Department of Biochemistry under the aegis of IQAC, Shaheed Rajguru College of Applied Sciences for Women, University of Delhi on October 27-28, 2020.
- Attended the International webinar on *Recent Trends in Systematic Biology* organized by Government Post Graduate College, Nagnath-Pokhari (Chamoli), Uttarakhand, Department of Higher Education, Uttarakhand, India on July 28, 2020.
- Attended One Day International Webinar on *Innovations And Practices in Biological And Environmental Sciences* organized by Department of Botany in collaboration with Department of Biotechnology and Microbiology, M.I.E.T., Meerut Raghunath Girl's (P.G.) College, Meerut, (UP) on June 28, 2020.
- Attended the 4th International webinar on *Challenges and Opportunities for Buisness and Economies Worldwide, Post Covid-19* organized by Govt. Raza P.G. College, Rampur, UP (India) on June 7, 2020.
- Attended the International webinar on *Intellectual Property Rights, an Overview: Myth and Realities* organized by Department of Botany and Department of Commerce and Management on June 6, 2020.
- Attended Two Day International Webinar on *Plant Biology: A Journey from Earth to Space* organized by the Department of Botany, Ramjas College, University of Delhi on May 22-23, 2020.
- Attended the Two Day International webinar on *Prevalent Crisis Triggered by the Covid19 Pandemic and its Appraisal* jointly organized by Department of Chemistry and Biomedical Science, Bhaskaracharya College of Applied Sciences, University of Delhi under the aegis of IQAC on May 18-19, 2020.

National:

- Attended the national webinar on *Sustainable Development and Sustainability: Myths and Realities* organized by Bloom, the Botany Society of Ramjas College, University of Delhi on October 28, 2020.
- Attended the national webinar on *Developing a potent vaccine against the SARS-CoV2: Feasibility and Challenges* organized by Department of Botany under the aegis of Science Setu, Maitreyi College, University of Delhi on October 7, 2020.
- Attended the webinar on *Cyber Hygiene For Virtual Teaching Platforms* organized by Department of Botany under the aegis of Internal Quality Assurance Cell, Maitreyi College, University of Delhi on October 3, 2020.

- Attended the webinar on *New National Education Policy 2020* a collaborative event by National Service Scheme Unit and Unnat Bharat Abhiyan Society of Shaheed Rajguru College of Applied Sciences for Women on September 29, 2020.
- Attended the webinar on *New National Education Policy 2020 and Digital Initiatives* organized by National Post Graduate College, an autonomous, CPE and NAAC Grade 'A' College of University of Lucknow on September 1, 2020.
- Attended the webinar on *Kitchen Gardening and Household Waste Management* organized by Mahatma Gandhi Institute for Combating Climate Change, Govt. of NCT of Delhi, Bakoli, Delhi-32 on August 25, 2020.
- Attended the webinar on *Colors In Nature* organized by Department of Botany, Kirori Mal College, University of Delhi on August 22, 2020.
- Attended the webinar on *Floriculture & Terrace Gardening* organized by Mahatma Gandhi Institute for Combating Climate Change, Govt. of NCT of Delhi, Bakoli, Delhi-32 on August 7, 2020.
- Attended the webinar on *Bio Diversity: Bio-Indicators, Monitoring and Ecosystem Health* organized by the Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar in collaboration with International Union for Conservation of Nature (IUCN) and Commission on Education and Communication (CEC) on World Environment Day on June 5, 2020.
- Attended the webinar on *Biodiversity and Man* organized by the Department of Botany, Dyal Singh College, University of Delhi in collaboration with Society for Ecological Research and Natural Resources Management (SERNRM) on June 5, 2020.
- Attended Ist IAMM Delhi Chapter Meet webinar on *Coffee with Covid 19 Experts- FAQs on Covid*, 2020 organized by Indian Association of Medical Microbiology (IAMM), Delhi Chapter, May, 28-30, 2020.
- Attended webinar on "*Data Analysis and Statistical Computing*" organized by the Department of Statistics, Institute of Social Sciences, Dr. Bhimrao Ambedkar University, Agra, May 27, 2020.
- Attended the webinar on *Happiness and Public Policy in the wake of COVID-19* organized by the Department of Commerce & IQAC, Dyal Singh College, University of Delhi on May 25, 2020.
- Attended the webinar on *Experience and Challenges of emerging infectious disease like Covid-19 (Part-2)* organized by Beckman Coulter on May 22, 2020.
- Attended webinar on *Ecological Revival during Pandemic* organized by Department of Chemistry of Bhaskaracharya College of Applied Sciences under the aegis of IQAC, May 21, 2020.
- Attended the Online Presidential Debate Competition: Colloquium organized by The Gladiatorial Intellect-The Debating Society, Sri Aurobindo College, University of Delhi, Delhi on May 20, 2020.
- Attended the webinar on *Higher Education in India: Pandemic Paradigms* delivered by Dr. LN Venkataraman, Department of Policy Studies, TERI School of Advanced Studies, TERI organized by Internal Quality Assurance Cell, Dyal Singh College, University of Delhi, New Delhi on May 20, 2020.
- Attended the webinar on *Biodiversity and Public Health* presented by Prof. C.R. Babu, FNASc, Professor Emeritus, Former Pro Vice Chancellor, University of Delhi organized by Eco Club, Shivaji College, University of Delhi, Delhi under the aegis of IQAC in collaboration with Society for Ecological Research and Natural Resources Management (SERNRM) on May 19, 2020.
- Attended Session 2 of webinar series on *Yoga for Healthy Body and Mind: An Integrated Care* by Mr. Ram Sahu (Classical Hatha Yoga Instructor, Isha Foundation, Coimbatore) and Session 3: *Basic Scientific Research and it's Societal Relevance* by Prof. J. K. Roy (Professor and Head, Department of Zoology, Institute of Sciences, Banaras Hindu University) organized by Department of Biochemistry, Shaheed Rajguru College of Applied Science for Women, University of Delhi, Delhi on May 18, 2020.
- Attended webinar on *Evolution of science seen from historical perspective* organized by Department of Botany, Deshbandhu College, University of Delhi, Delhi under the aegis of IQAC on May 12-13, 2020.

Certificate Courses attended:

- Participated in Two Week Online Certificate Course "Community Outreach Programme: Together We Can" organized by Unnat Bharat Abhiyan Cell, Miranda House, University of Delhi held from August 24-September 5, 2020.

Faculty Development Programs:

- Successfully completed Two Week Online National Faculty Development Program/Refresher Course on "*Emerging Accessible Technologies for Teachers in Higher Education*" jointly organized by Maitreyi College, University of Delhi and Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education, March 20-April 3, 2020.
- Successfully completed One week (Online) Faculty Development Programme on "*Exploratory Data Analysis using Statistical Softwares R and SPSS*" organized by Department of Statistics and Internal Quality Assurance Cell IQAC),

Mata Sundri College for Women, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre, A Centre of MoE, Govt. Of India, Under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT), Hansraj College, University of Delhi, January 7-13, 2020.

- Successfully completed with Grade A+ One Week National Online Faculty Program on “Digital Pedagogy to Enhance Teaching and Learning Experience” jointly organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education (MoE) and Maitreyi College, University of Delhi, New Delhi, December 15-21, 2020.
- Successfully completed with Grade A+ 4-Week Induction/Orientation Programme for “Faculty in Universities/Colleges/Institutes of Higher Education” organized by Teaching and Learning Centre, Ramanujan College, University of Delhi under the aegis of MINISTRY OF HUMAN RESOURCE DEVELOPMENT, PANDIT MADAN MOHAN MALVIYA NATIONAL MISSION ON TEACHERS AND TEACHING, November 10-December 9, 2020.
- Successfully completed One week (Online) Faculty Development Programme on "*Moving Towards New Normal through Effective Online Teaching*" organized by Kalindi College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre, A Centre of MoE, Govt. Of India, Under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT), Hansraj College, University of Delhi, December 1-7, 2020.
- Successfully completed the Online Faculty Development Programme on "*Innovations in Scientific Research Methods*" organized by Kirori Mal College, University of Delhi under the aegis of DBT Star College Scheme 2019-22, October 14-18, 2020.
- Successfully completed Faculty Development Program on "*ICT enabled Research During COVID Pandemic*" organized by Staff Training and Research Institution of Distance Education (STRIDE), Indira Gandhi National Open University, Maidan Garhi, New Delhi, September 24-30, 2020.
- Participated as eRapporteur in the session/s for Faculty Development Program on "*ICT enabled Research During COVID Pandemic*" organized by Staff Training and Research Institution of Distance Education (STRIDE), Indira Gandhi National Open University, Maidan Garhi, New Delhi, September 24-30, 2020.
- Successfully completed National One Week Online Faculty Training Program on "*PEDAGOGICAL TRAINING FOR EFFECTIVE ONLINE TEACHING & LEARNING*" organized by Deen Dayal Upadhyaya College (University of Delhi) and K.T.H.M. College, Nashik, Maharashtra under Internal Quality Assurance Cell & DBT Star College Program, August 3-10, 2020.

Training Programs:

- Participated in IP Awareness/Training program under NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION organized by Intellectual Property Office, India on February 8, 2022.

Awards and Scholarships

- Awarded travel grant (50%) by CSIR to attend the 10th *International Meeting on Cholinesterases*, Sibenik, Croatia, September 20-25, 2009 (in the meeting held on August, 2009)
- Awarded travel grant (100%) by the Department of Biotechnology to attend the 40th *Annual Meeting of American Society of Neurochemistry*, Charleston, South Carolina, USA, March 7-11, 2009 (in the meeting held on 9 February, 2009)
- Recipient of Joint CSIR-UGC Junior Research Fellowship (JRF) and Eligibility for Lecturership-National Eligibility Test conducted by Council of Scientific and Industrial Research, India (June, 2001)-File # **CSIR JRF (JUNE, 2001) No.2-40/2000(ii)-EU II**
- Recipient of Joint CSIR-UGC National Eligibility Test (NET) for Lecturership conducted by Council of Scientific and Industrial Research, India (December 2000)-File # **UGC NET (DECEMBER, 2000) No.2-40/2000(ii)-EU II**
- Secured first rank in the Bachelor's program in Botany (1996-1999) and was awarded by Dr. Manmohan Singh and Dr. Montai Singh Ahluwalia in 1997 and 1999 respectively
- Awarded for secured highest marks in Mathematics (1993-1994)

Teaching and Research Experience (12+ years)

Post doctoctoral Fellowship: **1 year 8 months**

Teaching (Adhoc): **6 years 10 months 20 days**

Teaching (Guest): **4 years 11 months 19 days**

- Guest Faculty at Miranda House, University of Delhi, India 6 September, 2019-till date
- **Assistant Professor at Miranda House College, University of Delhi, India** 20 July, 2017-20 July, 2019
- Guest Faculty at Miranda House, University of Delhi, India 9 January, 2017-27 April, 2017
- Guest Faculty at Acharya Narendra Dev College, University of Delhi, India 3 January, 2017-27 April, 2017
- Guest Faculty at St. Stephen's College, University of Delhi, India 20 July, 2016-11 November, 2016
- Guest Faculty at Miranda House, University of Delhi, India 25 July, 2016-11 November, 2016
- Guest Faculty at Acharya Narendra Dev College, University of Delhi, India 28 July, 2016-11 November, 2016
- **Assistant Professor at St. Stephen's College, University of Delhi, India** 22 July, 2015-20 May, 2016
- **Assistant Professor at Sri Aurobindo College (Evening), University of Delhi, India** 5 Jan. 2015-22 May, 2015
- **Assistant Professor at Maitreyi College, University of Delhi, India** 10 September, 2014-3 January, 2015
- Guest Faculty at Daulat Ram College, University of Delhi, India 22 August, 2014- 10 November, 2014
- Guest Faculty at Acharya Narendra Dev College, University of Delhi, India 28 March, 2014-23 April, 2014
- **Assistant Professor at Maitreyi College, University of Delhi, India** 7 January, 2014-12 February, 2014
- Guest Faculty at Sri Aurobindo College, University of Delhi, India 21 October, 2013-7 November, 2013
- Guest Faculty at Keshav Mahavidyalaya College, University of Delhi, India 23 September, 2013-10 November, 2013
- **Assistant Professor at Shivaji College, University of Delhi, India** 5 January, 2013-22 May, 2013
- Guest Faculty at Kirori Mal College, University of Delhi, India 19 September, 2012-19 November, 2012
- Guest Faculty at Sri Aurobindo College (Morning), University of Delhi, India 14 August, 2012-14 November, 2012
- **POST DOCTORAL FELLOWSHIP MAYO CLINIC, USA** 27 September, 2010-20 May, 2012
- **Assistant Professor at Gargi College, University of Delhi, India** 8 August, 2009-25 September, 2010
- Part Time Academic Councillor for BSc. Programme for LSE-01,02,03, 06, 12, 13 8 March, 2010-25 September, 2010
- Guest Faculty at Shyam Lal College, University of Delhi, India 15 September, 2007-23 March, 2008
- **Assistant Professor at Dyal Singh College, University of Delhi, India** 2 August, 2007-30 April, 2009
- Guest Faculty at Shyam Lal College, University of Delhi, India 19 October, 2007-23 March, 2008
- Guest Faculty at Dyal Singh College, University of Delhi, India 4 December, 2006-23 March, 2007

I have taught B.Sc. (H) Botany, Life Science, Biology I, II (for B.Sc. Physical and Applied Physical Science) course (validated by the University of Delhi) for Year-1, 2 and 3. My duties involved delivery of lectures, organizing laboratories, supporting students, writing assignments, examination papers, preparing laboratory notes and assessing course as well as exam papers.

Guest Faculty at Miranda House, University of Delhi, India

6 September, 2019- till date

7 April, 2022-26 July, 2022

Subjects taught:

- Theoretical sessions for *Mycology and Plant Pathology* (Bachelor of Science-Botany Honours, Ist year)
- Practical sessions for *Mycology and Plant Pathology* (Bachelor of Science-Botany Honours, Ist year)

3 January, 2022- 28 April, 2022 (for Bachelor of Science- Life Science, IInd year, IIIrd year)

Subjects taught:

- Theoretical sessions for *Plant Physiology and Metabolism* (Bachelor of Science- Life Science, IInd year)
- Practical sessions for *Economic Botany and Biotechnology* (Bachelor of Science- Life Science, IIIrd year)
- Practical sessions for *Intellectual Property Rights* (Bachelor of Science- Life Science, IIIrd year)

22 November, 2021-11 March, 2021 ((Bachelor of Science- Botany Honours, Ist year ; Zoology Honours, Ist year)

Subjects taught:

- Theoretical sessions for *Biomolecules and Cell Biology* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

26 August, 2021- 16 November, 2021 (for Bachelor of Science-Botany Honours, IIIrd year)

26 August, 2021-12 December, 2021 (for Bachelor of Science- Life Science, IInd year)

Subjects taught:

- Theoretical sessions for *Biostatistics* (Bachelor of Science-Botany Honours, IIIrd year)
- Theoretical sessions for *Plant Anatomy and Embryology* (Bachelor of Science- Life Science, IInd year)
- Practical sessions for *Biostatistics* (Bachelor of Science-Botany Honours, IIIrd year)
- Practical sessions for *Economic Botany* (Bachelor of Science-Botany Honours, IInd year)

- Practical sessions for *Plant Anatomy and Embryology* (Bachelor of Science- Life Science, IInd year)

April, 2021-August, 2021

Subjects taught:

- Theoretical sessions for *Plant Ecology and Taxonomy* (Bachelor of Science- Life Science, Ist year)
- Theoretical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Archegoniatae* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Plant Ecology and Taxonomy* -Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

18 November, 2020-March, 2021

Subjects taught:

- Theoretical sessions for *Biodiversity* (Bachelor of Science- Life Science, Ist year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Biomolecules and Cell Biology* (Bachelor of Science-Botany Honours, Ist year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

2 January, 2020-May, 2020

Subjects taught:

- Theoretical sessions for *Ecology* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Plant Ecology and Taxonomy*- (Bachelor of Science- Life Science, Ist year)
- Practical sessions for *Ecology* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Plant Systematics* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Plant Systematics* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Plant Ecology and Taxonomy* -Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

6 September, 2019-December, 2019

Subjects taught:

- Theoretical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Theoretical sessions for *Biodiversity* (Bachelor of Science- Life Science, Ist year)
- Practical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

Assistant Professor at Miranda House, University of Delhi, India

20 July, 2017-20 July, 2019

1 January, 2019-25 May, 2019

Subjects taught:

- Theoretical sessions for *Ecology* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Plant Ecology and Taxonomy* (Bachelor of Science-Life Science, Ist year)
- Theoretical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Ecology* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Biofertilizer* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Plant Ecology and Taxonomy* (Bachelor of Science-Life Science, Ist year)

20 July, 2018-16 December, 2018

Subjects taught:

- Theoretical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Cell and Molecular Biology* (Bachelor of Science-Life Science, IIIrd year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

1 January, 2018-19 May, 2018

Subjects taught:

- Theoretical sessions for *Ecology* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Plant Ecology and Taxonomy* (Bachelor of Science-Life Science, Ist year)
- Theoretical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

- Practical sessions for *Bioinformatics* (Bachelor of Science-Botany Honours, IIIrd year)
- Practical sessions for *Plant Ecology and Taxonomy* (Bachelor of Science-Life Science, Ist year)
- Practical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

20 July, 2017-16 December, 2017

Subjects taught:

- Theoretical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Biostatistics* (Bachelor of Science-Botany Honours, IIIrd year)
- Practical sessions for *Anatomy of Angiosperms* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

Project Applied: Development of cyanobacterial active dip bag for mitigation of cancer causing Arsenic from drinking water

Guest Faculty at Miranda House, University of Delhi, India

9 January, 2017-27 April, 2017

Subjects taught:

- Theoretical sessions for *Ecology and Environmental Management* (Bachelor of Science-Life science, IIIrd year)
- Practical sessions for *Ecology and Environmental Management* (Bachelor of Science-Life science, IIIrd year)

Reason for leaving position: Short term position and was further upgraded to Assistant Professor (on ad-hoc basis) in the same college.

Guest Faculty at Acharya Narendra Dev College, University of Delhi, India

3 January, 2017-27 April, 2017

Subjects taught:

- Theoretical sessions for *Ecology and Environmental Management* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Plant Physiology and Metabolism* (Bachelor of Science-Life Science, IInd year)
- Practical sessions for *Plant Ecology and Taxonomy*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

Reason for leaving: Short term position.

Guest Faculty at Miranda House, University of Delhi, India

25 July, 2016-11 November, 2016

Subjects taught:

- Theoretical sessions for *Environment Studies* (Bachelor of Science-Botany Honours, Ist year)

Reason for leaving: Short term position.

Guest Faculty at St. Stephen's College, University of Delhi, India

20 July, 2016-11 November, 2016

Subjects taught:

- Theoretical sessions for *Environment Studies* (Bachelor of Science-Physics Honours, Ist year)

Reason for leaving: Short term position.

Guest Faculty at Acharya Narendra Dev College, University of Delhi, India

28 July, 2016-11 November, 2016

Subjects taught:

- Theoretical sessions for *Biodiversity* (Bachelor of Science-Life Science, Ist year)
- Theoretical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)
- Practical sessions for *Plant Anatomy and Embryology* (Bachelor of Science-Life Science, IInd year)
- Practical sessions for *Biodiversity*-Generic Elective (Bachelor of Science-Zoology Honours, Ist year)

Reason for leaving: Short term position.

Assistant Professor at St. Stephen's College, University of Delhi, India

22 July, 2015-20 May, 2016

Subjects taught:

- Theoretical sessions for *Biology I, II* (Bachelor of Science (Prog.)-Chemistry and Computer Science, IInd year)
- Theoretical sessions for *Environment Studies* (Bachelor of Science (Prog.)-Chemistry and Computer Science, Ist year; Physics Honours, Ist year)
- Practical sessions for *Biology I, II* (Bachelor of Science (Prog.)-Chemistry and Computer Science, IInd year)

Projects Undertaken

- Study of flora at St. Stephen's College
 - Studying the potential of flora as biopesticide at St. Stephen's College
- Reason for leaving: Withdrawal of Biology from B.Sc. Programme under CBCS scheme by University of Delhi.

Assistant Professor at Sri Aurobindo College (Evening), University of Delhi, India

5 January, 2015-22 May, 2015

Subjects taught:

- Theoretical sessions for *Environment Studies* (Bachelor of Arts-Applied Psychology Honours, Ist year; Hindi Honours, Ist year; Pass Programme, Ist year; Bachelor of Commerce, Ist year)

Reason for leaving: As per CEMDE, EVS teaching requires M.Sc. EVS.

Assistant Professor at Maitreyi College, University of Delhi, India

10 September, 2014- 3 January, 2015

Subjects taught:

- Theoretical sessions for *Environment Studies* (Bachelor of Arts-Economics, Ist year; Bachelor of Science-Chemistry Honours, Ist year; Mathematics Honours, Ist year; Botany Honours-Ist year)

Reason for leaving: Fall in workload.

Guest Faculty at Daulat Ram College, University of Delhi, India

22 August, 2014-10 November, 2014

Subjects taught:

- Theoretical sessions for *Plant Resource Utilization* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Introduction to Biology* (Bachelor of Science-Life Science, Ist year)
- Practical sessions for *Introduction to Biology* (Bachelor of Science-Life Science, Ist year)

Reason for leaving: Short term position.

Guest Faculty at Acharya Narendra Dev College, University of Delhi, India

28 March, 2014-23 April, 2014

Subjects taught:

- Theoretical sessions for *Medical Biotechnology* (Bachelor of Biomedical Science, IIIrd year)
- Theoretical sessions for *Genetics and Genomics* (Bachelor of Biomedical Science, IIIrd year)
- Theoretical sessions for *Biochemistry* (Bachelor of Biomedical Science, IInd year)

Reason for leaving: Short term position.

Assistant Professor at Maitreyi College, University of Delhi, India

7 January, 2014-12 February, 2014

Subjects taught:

- Theoretical sessions for *Cell Biology II* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Molecular Biology II* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Fundamentals of Plant Biochemistry* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Bioinformatics* (Bachelor of Science-Life Science, IInd year)
- Theoretical sessions for *Cell and Cellular Processes* (Bachelor of Science-Life Science, Ist year)
- Practical sessions for *Cell Biology II* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Fundamentals of Plant Biochemistry* (Bachelor of Science-Botany Honours, Ist year)
- Practical sessions for *Bioinformatics* (Bachelor of Science-Life Science, IInd year)
- Taught Foundation Course : Integrated Mind, Body and Heart (Bachelor of Science-Botany Honours, Ist year)

Reason for leaving: Lost position in permanent interview.

Guest Faculty at Sri Aurobindo College, University of Delhi, India

21 October, 2013-7 November, 2013

Subjects taught:

- Theoretical sessions for *Phycology and Microbiology* (Bachelor of Science-Botany Honours, Ist year) (Microbiology)
- Practical sessions for *Developmental Biology and Plant Physiology* (Bachelor of Science-Life Science, IIIrd year)

Reason for leaving: Short term position.

Guest Faculty at Keshav Mahavidyalaya, University of Delhi, India

23 September, 2013-10 November, 2013

Subjects taught:

- Practical sessions for *Biology* (Bachelor of Physical and Applied Physical Science, Ist year)

Reason for leaving: Short term position.

Assistant Professor at Shivaji College, University of Delhi, India

5 January, 2013-22 May, 2013

Subjects taught:

- Theoretical sessions for *Plant Development and Anatomy* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Cell and Cellular Processes (Biology II)* (Bachelor of Science-Life Science; Chemistry (H), Ist year; Physical Science; Applied Physical Science, IInd year)
- Practical sessions for *Plant Development and Anatomy* (Bachelor of Science-Botany Honours, IInd year)
- Practical sessions for *Cell and Cellular Processes (Biology II)* (Bachelor of Science-Chemistry Honours, Ist year; Physical Science; Applied Physical Science, IInd year)

Reason for leaving: Fall in workload.

Guest Faculty at Kirori Mal College, University of Delhi, India

19 September, 2012-19 November, 2012

Subjects taught:

- Theoretical sessions for *Biodiversity-1 (Algae and Microbiology)* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Genetics and Genomics* (Bachelor of Science-Life Science, IIIrd year)
- Practical sessions for *Genetics and Genomics* (Bachelor of Science-Life Science, IIIrd year)

Reason for leaving: I was continued but was not allowed to pursue guest along with ad-hoc position at Shivaji College.

Guest Faculty at Sri Aurobindo College, University of Delhi, India

14 August, 2012-14 November, 2012

Subjects taught:

- Theoretical sessions for *Genetics and Genomics* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Biology* (Bachelor of Science-Life Science, Ist year)
- Practical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Practical sessions for *Biology* (Bachelor of Science-Life Science, Ist year)

Reason for leaving: I was continued but was not allowed to pursue guest along with adhoc position at Shivaji College.

Part Time Academic Counsellor for BSC Programme for LSW-01,02,03,06,07,12,13 Course/s

8 March, 2010-25 September, 2010

Reason for leaving: I left the position in order to enhance the skills as a Post Doctoral Fellow at Mayo Clinic, Jacksonville, Florida, USA.

Assistant Professor at Gargi College, University of Delhi, India

8 August, 2009-25 September, 2010

21 July, 2010- 25 September, 2010

Subjects taught:

- Theoretical sessions for *Biodiversity-1 (Algae and Microbiology)* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Introduction to Biology* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Biotechnology Optional* (Bachelor of Science-Life Science, IIIrd year)
- Practical sessions for *Biodiversity-1 (Algae and Microbiology)* (Bachelor of Science-Botany Honours, Ist year)
- Practical sessions for *Introduction to Biology* (Bachelor of Science-Life Science, Ist year)

8 August, 2009-30 April, 2010

Subjects taught:

- Theoretical sessions of Microbiology for *Microbiology, Mycology and Plant Pathology (Microbiology)* (Bachelor of Science-Botany Honours, Ist year)
- Theoretical sessions for *Biotechnology Optional* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Theoretical sessions for *Biology* (Bachelor of Physical Science-Ist year)
- Theoretical sessions for *Economic and Applied Botany* (Bachelor of Zoology Honours, IInd year)
- Theoretical sessions for *Plant Diversity* (Bachelor of Zoology Honours, Ist year)

- Theoretical sessions for *Plant Structure* (Bachelor of Zoology Honours, Ist year)
- Practical sessions for *Biology* (Bachelor of Physical Science-Ist year)
- Practical sessions for *Plant Function and Genetics* (Bachelor of Zoology Honours, IInd year)
- Practical sessions for *Plant Diversity* (Bachelor of Zoology Honours, Ist year)
- Practical sessions *Plant Structure* (Bachelor of Zoology Honours, Ist year)

Reason for leaving: I left the position in order to enhance the skills as a Post Doctoral Fellow at Mayo Clinic, Jacksonville, Florida, USA.

Assistant Professor at Dyal Singh College, University of Delhi, India

2 August, 2007-30 April, 2009

1 September, 2008- 30 April, 2009

Subjects taught:

- Theoretical sessions for *Plant Metabolism* (Bachelor of Science-Botany Honours, IIIrd year)
- Theoretical session for *Archegoniate (Gymnosperms)* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Biotechnology Optional* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Theoretical sessions for *Biology* (Bachelor of Physical Science, Ist year)
- Practical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Practical sessions for *Genetics and Molecular Biology* (Bachelor of Science-Life Science, IInd year)
- Practical sessions for *Biology* (Bachelor of Physical Science; Applied Physical Science-Ist year)

16 July, 2008-31 August, 2008

Subjects taught:

- Theoretical sessions for *Plant Metabolism* (Bachelor of Science-Botany Honours, IIIrd year)
- Theoretical session for *Archegoniate (Gymnosperms)* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical session for *Economic Botany & Crop Improvement and Plant Breeding* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Applied Biology and Biotechnology* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Theoretical sessions for *Biology* (Bachelor of Physical Science, Ist year)
- Practical sessions for *Applied Biology and Biotechnology* (Bachelor of Science-Life Science, IIIrd year)
- Practical sessions for *Biology* (Bachelor of Physical Science; Applied Physical Science, Ist year)

2 August, 2007- 30 April, 2008

Subjects taught:

- Theoretical sessions for *Plant Metabolism* (Bachelor of Science-Botany Honours, IIIrd year)
- Theoretical session for *Archegoniate (Gymnosperms)* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical session for *Economic Botany & Crop Improvement and Plant Breeding* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical sessions for *Applied Biology and Biotechnology* (Bachelor of Science-Life Science, IIIrd year)
- Theoretical sessions for *Biodiversity* (Bachelor of Science-Life Science, IInd year)
- Theoretical sessions for *Biology* (Bachelor of Physical Science, Ist year).
- Practical sessions for *Embryology of Angiosperms* (Bachelor of Science-Botany Honours, IIIrd year)
- Practical sessions for *Applied Biology and Biotechnology* (Bachelor of Science-Life Science, IIIrd year)

Reason for leaving: I myself left the college despite being continued.

Guest Faculty at Shyam Lal College, University of Delhi, India

15 September, 2008-23 March, 2009

Subjects taught:

- Theoretical sessions for *Biotechnology Optional* (Bachelor of Physical Science and Electronics, IIIrd year)
- Practical sessions for *Biology* (Bachelor of Physical Science, Ist year)

Reason for leaving: Short term position.

Guest Faculty at Shyam Lal College, University of Delhi, India

19 October, 2007-23 March, 2008

Subjects taught:

- Theoretical sessions for *Biotechnology Optional* (Bachelor of Physical Science and Electronics, IIIrd year)

Reason for leaving: Short term position.

Guest Faculty at Dyal Singh College, University of Delhi, India

4 December, 2006-23 March, 2007

Subjects taught:

- Theoretical session for *Economic Botany and Crop Improvement* (Bachelor of Science-Botany Honours, IInd year)
- Theoretical session for *Biology for Physical Science* (Bachelor of Physical Science, Ist year)
- Practical sessions for *Plant Anatomy and Economic Botany* (Bachelor of Science-Botany Honours, IIIrd year)

Reason for leaving: Upgraded to adhoc position in the same college.

University theory paper setting:

- Biodiversity (Microbes, Algae, Fungi and Archegoniatae), Unique Paper Code: 32165101-25 February, 2022
- Plant Ecology & Phytogeography-Unique Paper Code: BTHT – 406 (216403)-25 March, 2019
- Biodiversity (Microbes, Algae, Fungi and Archegoniatae), Unique Paper Code: 32165101-24 October, 2018

External and Internal Examinership for University Practical Examination

- **2010:** Appointed as External Examiner for the conduct of the B.Sc. (H) I Yr Part-I Subsidiary Botany Practical Examination of University of Delhi at Hans Raj College, University of Delhi from **5.4.2010 to 6.4.2010**.
- **2013:** Appointed as External Examiner for the conduct of the B.Sc. (H) Chemistry Part-II Semester II **Paper LSPP-202 Biology-II Cell and Cellular Processes** (Unique Paper Code: 216252) Practical Examination of University of Delhi at Zakir Husain Delhi College, University of Delhi on **12.3.2013**.
Appointed as External Examiner for the conduct of the B.Sc. Physical Science Part-I Semester II **Paper LSPP-202 Biology-II Cell and Cellular Processes** (Unique Paper Code: 216252) Practical Examination of University of Delhi at Deen Dayal Upadhyay College, University of Delhi on **13.3.2013**.
Appointed as External Examiner for the conduct of the B.Sc. Physical Science Part-I Semester II **Paper LSPP-202 Biology-II Cell and Cellular Processes** (Unique Paper Code: 216252) Practical Examination of University of Delhi at Shivaji College, University of Delhi on **6.4.2013**.
Appointed as Internal Examiner for the conduct of the B.Sc. (H) Botany Part-II Semester IV **Paper BTHP-405 Plant Development and Anatomy** (Unique Paper Code: 216402) Practical Examination of University of Delhi at Shivaji College, University of Delhi on **19.4.2013**.
Appointed as External Examiner for the conduct of the B.Sc. (H) Botany Part-II Semester III **Paper LSPP-304 Biodiversity-I Microbes** (Unique Paper Code: 216352) Practical Examination of University of Delhi at Shivaji College, University of Delhi on **14.11.2013**.
- **2015:** Appointed as Internal Examiner for the conduct of the B.Sc. Physical Science I Yr Semester I **Paper LSPP-101 Biology-I Introduction to Biology** (Unique Paper Code: 32161301) Practical Examination of University of Delhi at St. Stephen's College, University of Delhi from **18.11.2015 to 19.11.2015**.
- **2016:** Appointed as Internal Examiner for the conduct of the B.Sc. Physical Science I Yr Semester II **Paper LSPP-202 Biology-II Cell and Cellular Processes** (Unique Paper Code: 216252) Practical Examination of University of Delhi at St. Stephen's College, University of Delhi from **18.5.2016 to 19.5.2016**.
- Appointed as External Examiner for the conduct of the B.Sc. (H) Zoology, Semester I **GE1 Botany Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101), Practical Examination of University of Delhi at Miranda House, University of Delhi on **18.11.2016**.
- **2017:** Appointed as Internal Examiner for the conduct of the B.Sc. Life Science III Yr **Paper 24, LSPP-615, Ecology and Environmental Management** (Unique Paper Code: 32223905) Practical Examination of University of Delhi at Miranda House, University of Delhi from **7.5.2017 to 8.5.2017**.
Appointed as Internal Examiner for the conduct of the B.Sc. Botany (H) II Yr Semester III **Paper Anatomy of Angiosperms** (Unique Paper Code: 32161301) Practical Examination of University of Delhi at Miranda House, University of Delhi from **18.11.2017 to 19.11.2017**.
Appointed as Internal Examiner for the conduct of the B.Sc. (H) Zoology, Semester I **GE1 Botany Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101), Practical Examination of University of Delhi at Miranda House, University of Delhi from **24.11.2017 to 25.11.2017**.
Appointed as External Examiner for the conduct of the B.Sc. Life Science I Yr Semester I **Paper Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 42161101) Practical Examination of University of Delhi at Swami Shraddhanand College, University of Delhi on **21.11.2017 & 23.11.2017**.

Appointed as External Examiner for the conduct of the B.Sc. (H) I Yr Semester I **GE1 Botany Paper Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101) Practical Examination of University of Delhi at Ramjas College, University of Delhi on **22.11.2017**.

Appointed as Internal Examiner for the conduct of the B.Sc. (H)/ B.A. (H) I Yr Semester I **GE1 Paper Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101) Practical Examination of University of Delhi at Swami Shraddhanand College, University of Delhi on **27.11.2017**.

- **2018:** Appointed as Internal Examiner for the conduct of the B.Sc. Life Science I Yr Semester I **Paper Plant Ecology and Taxonomy** (Unique Paper Code: 42161201) Practical Examination of University of Delhi at Miranda House, University of Delhi on **24.4.2018**.

Appointed as External Examiner for the conduct of the B.Sc. Botany (H) III Yr Semester VI **Paper DSE4 Bioinformatics** (Unique Paper Code: 32167608) Practical Examination of University of Delhi at Deshbandhu College, University of Delhi on **1.5.2018**.

Appointed as External Examiner for the conduct of the B.Sc. Life Science III Yr Semester V **Paper Cell and Molecular Biology** (Unique Paper Code: 42167902) Practical Examination of University of Delhi at Sri Venkateswara College, University of Delhi from **13.11.2018 to 15.11.2018**.

Appointed as Internal Examiner for the conduct of the B.Sc. Life Science I Yr Semester I **Paper Biodiversity (Microbes, Algae, fungi and Archegoniatae)** (Unique Paper Code: 42161101) Practical Examination of University of Delhi at Miranda House, University of Delhi from **16.11.2018 to 17.11.2018**.

Appointed as Internal Examiner for the conduct of the B.Sc. Botany (H) II Yr Semester III **Paper Anatomy of Angiosperms** (Unique Paper Code: 32161301) Practical Examination of University of Delhi at Miranda House, University of Delhi from **18.11.2018 to 19.11.2018**.

- **2019:** Appointed as Internal Examiner for the conduct of the B.Sc. Life Science I Yr Semester I **Paper Plant Ecology and Taxonomy** (Unique Paper Code: 42161201) Practical Examination of University of Delhi at Miranda House, University of Delhi on **24.4.2019**.

Appointed as Internal Examiner for the conduct of the B.Sc. Botany (H) II Yr Semester IV **Paper Ecology** (Unique Paper Code: 32223905) Practical Examination of University of Delhi at Miranda House, University of Delhi from **3.5.2019 to 4.5.2019**.

- **2020:** Appointed an Internal Co-examiner for the Undergraduate Practical Assignments (OBE) for the paper: B.Sc. (H) Botany, II Yr Semester IV CBCS Course **Ecology** (Unique Paper Code: 32161402) on **21.5.2020**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignments (OBE) for the paper: B.Sc. (H) Botany, II Yr Semester IV CBCS Course **Plant Systematics** (Unique Paper Code: 32161403) on **23.5.2020**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignments (OBE) for the paper: B.Sc. (H) Zoology, I Yr Semester I CBCS Course **GE1 Botany Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101) on **27.5.2020**.

- **2021:** Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Botany, LOCF Course Semester I: **Biomolecules and Cell Biology** (Unique Paper Code: 32161102) on **10.3.2021**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Zoology, I Yr Semester I LOCF Course **GE1 Botany Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101) on **12.3.2021**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Botany, I Yr Semester II LOCF Course **Archegoniatae** (Unique Paper Code: 32161202) on **28.7.21**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Zoology, I Yr Semester II LOCF Course **GE2 Plant Ecology and Taxonomy** (Unique Paper Code: 32165201) on **30.7.21**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Botany, III Yr Semester V LOCF Course **Biostatistics** (Unique Paper Code: 32167502) on **18.11.2021**

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Botany, II Yr Semester III LOCF Course Semester III: **Economic Botany** (Unique Paper Code: 32161102) on **7.12.21**.

Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Zoology, II Yr Semester III LOCF Course **GE3 Plant Anatomy and Embryology** (Unique Paper Code: 42164301) on **7.12.21**.

- **2022:** Appointed an Internal Co-examiner for the Undergraduate Practical Assignment (OBE) for the paper: B.Sc. (H) Zoology, I Yr Semester I LOCF Course **GE1 Botany Biodiversity (Microbes, Algae, Fungi and Archegoniatae)** (Unique Paper Code: 32165101) on **12.3.2022**.

Workshops Attended/Organized

- Participated in conducting Bridge course “Basic Laboratory Techniques” for the students of B.Sc. Botany IInd year and B.Sc. Life Science IInd year organized by Department of Botany, Miranda House, University of Delhi on 9 April 2022.

- Participated in conducting Bridge course “Basic Laboratory Techniques” for the students of B.Sc. Botany Ist year and B.Sc. Life Science Ist year organized by Department of Botany, Miranda House, University of Delhi on 2 March 2022.
- Attended two days workshop on *Bioinformatics: Sequence Analyses to Model Building* organized by Department of Botany, Bhaskaracharya College of Applied Sciences, University of Delhi, Delhi on November 21-22, 2020.
- Attended workshop on *Air Pollution Mitigation: Species to Communities* organized by Department of Botany, Miranda House, University of Delhi, Delhi on February 17, 2020.
- Attended workshop on "Herbarium Techniques" organized by Department of Botany, Miranda House under the aegis of DBT Star College Scheme, Miranda House, University of Delhi, Delhi-110007, January 20, 2020.
- Attended workshop on "Evolving Face of Microscopy: Magnifying Lens to Nanoscope" organized by Department of Botany, Miranda House under the aegis of DBT Star College Schemes in collaboration with Department of Botany, University of Delhi, Delhi-110007, December 11-12, 2019.
- Attended DBT-Biotechnology Popularization Programme on "Antimicrobial Resistance-Understanding one of the major Healthcare Challenges of Today" organized by DBT Star College Miranda House in collaboration with CRI, France and CSIR-IMTECH, India, Miranda House, University of Delhi, Delhi-110007, June 3, 2019.
- Participated in conducting one day "Workshop on Biofertilizers” for B.Sc. Life Science (IInd year) organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, March 13, 2019.
- Participated in conducting one day "Workshop on Biofertilizers” for B.Sc. (H) Zoology (Ist year) organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, November 2, 2018.
- Participated in conducting Bridge course “Basic Laboratory Techniques” for B.Sc. Life Science (Ist year), organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, September 6-7, 2018.
- Attended Biodiversity Conclave on "Biodiversity for Everyone's Life" organized by Miranda House University of Delhi and Institute of Bioresources and Sustainable Development (IBSD), Manipur, Miranda House, University of Delhi, Delhi-110007, August 31, 2018.
- Participated in conducting Bridge course “Basic Laboratory Techniques” for B.Sc. (H) Botany (Ist year), organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, August 27-29, 2018.
- Attended "The Bonsai Workshop" organized under DBT Star College Scheme in collaboration with Indian Bonsai Association, Department of Botany, Miranda House, University of Delhi, Delhi-110007, March 22, 2018.
- Participated in conducting INSPIRE INTERNSHIP PROGRAMME 2017 "Innovation in Science Pursuit for Inspired Research"-an initiative of Department of Science and Technology, Government of India. The program involved workshop on *A unique symbiotic relationship (Azolla:Anabaena)*, Miranda House, December 18-22, 2017, University of Delhi, Delhi-110007.
- Attended one day Indo-Hungarian Symposium on "Recent Advances in Chemistry and Biology" organized by Department of Chemistry, Miranda House, December 11, 2017, University of Delhi, Delhi-110007.
- Attended workshop on "Catalyzing a Cultural shift in Youth Entrepreneurship", organized by D S Kothari Centre for Research and Innovation in Science Education, Miranda House, University of Delhi and Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology, Government of India, Miranda House, University of Delhi, Delhi-110007, November 9, 2017.
- Participated in conducting Bridge course “Basic Laboratory Techniques” for B.Sc. Life Science (Ist year) organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, September 7-8, 2017.
- Participated in conducting Bridge course “Basic Laboratory Techniques” for B.Sc. (H) Botany (Ist year) organized by Department of Botany, Miranda House, University of Delhi, Delhi-110007, September 5-6, 2017.
- Attended National workshop on "Medicinal Plants and Drug Discovery" organized under the Aegis of DBT Star college Project, Ramjas College, University of Delhi, Delhi-110007, January 30-31, 2017.
- Attended Workshop on "Training the Trainers : Intellectual Property Rights Workshop" organized by IPR Chair and CIC-CSEC in collaboration with Ramjas College, University of Delhi, Delhi-110007, August 10-11, 2016.
- Attended Workshop on "Introduction to Bioinformatics" under Faculty Improvement Program organized by Department of Botany, Gargi College, University of Delhi, Siri Fort Road, Delhi-110049, September 15-16, 2009.
- Attended Workshop on "Application of Free/Open Source Software in Science Teaching and Research" organized by Acharya Narendra Dev College, University of Delhi and NRCFOSS, Anna University, Chennai, Acharya Narendra Dev College, University of Delhi, Govindpuri, Delhi-110019, April 14-15, 2009.
- Attended Workshop on *Spectroscopic and Chromatographic Analytical Techniques- HPLC, GLC, NMR, Colorimetry, Flame Photometer, Atomic Absorption Spectrophotometer, TLC, Spectrophotometry* etc. organized by Centre for Entrepreneurship and Career Oriented Programme and Shaheed Rajguru College of Applied Science for Women, University of Delhi, Jhilmil Colony, Vivek Vihar, Delhi-110095.

Resource person:

- Resource person for the Bridge course “Basic Laboratory Techniques-Use of Glassware” for the students of B.Sc. Botany IInd year and B.Sc. Life Science IInd year organized by Department of Botany, Miranda House, University of Delhi on 9 April 2022.
- Resource person for the Bridge course “Basic Laboratory Techniques-Use of Glassware” for the students of B.Sc. Botany Ist year and B.Sc. Life Science Ist year organized by Department of Botany, Miranda House, University of Delhi on 2 March 2022.
- Resource person for “Compost and Soil analysis”, a module involved in one day "Workshop on Biofertilizers" organized by Department of Botany, Miranda House, University of Delhi on 13 March 2019. Under the aegis of DBT Star College Scheme, Faculty at Department of Botany conducted a one-day "Workshop on Biofertilizers". During the workshop, students were also given insight about the Compost and hands-on experience pertaining to "Analysis of soil supplemented with different types of compost".
- Resource person for “A unique symbiotic relationship (*Azolla:Anabaena azollae*), a module involved in one day "Workshop on Biofertilizers" organized by Department of Botany, Miranda House, University of Delhi on 2 November 2018. Under the aegis of DBT Star College Scheme, Faculty at Department of Botany conducted a one-day "Workshop on Biofertilizers". During the workshop, students were also given insight about the unique symbiotic relationship of *Anabena-Azolla* and hands-on experience pertaining to preparation of temporary tease mount of *Anabaena* filaments using *Azolla* leaf.
- Resource person for "Baseline Tests (Biology) 2018-19" conducted by D.S. Kothari Centre for Research & Innovation in Science Education, Miranda House, University of Delhi on 22 August 2018.
- Resource person for the workshop “A Unique Symbiotic Relationship-*Anabena-Azolla*” Department of Botany, held on 18-22 December 2017, Miranda House, University of Delhi. As a part of *INSPIRE Internship Programme, 2017, Innovation in Science Pursuit for Inspired Research, An Initiative of DST, Government of India*, Faculty at Department of Botany conducted a workshop entitled *DNA and Enzymes: Tiny but Mighty Players*. During the workshop, students were also given insight about the unique symbiotic relationship of *Anabena-Azolla* and hands-on experience pertaining to preparation of temporary tease mount of *Anabaena* filaments using *Azolla* leaf.
- Resource person for the Bridge course “Basic Laboratory Techniques-Use of Glassware” for the students of B.Sc. Botany Ist year and B.Sc. Life Science Ist year organized by Department of Botany, Miranda House, University of Delhi on 6-7 September 2018 and 27-29 August 2018 respectively.
- Resource person for the Bridge course “Basic Laboratory Techniques-Use of Glassware” for the students of B.Sc. Botany Ist year and B.Sc. Life Science Ist year organized by Department of Botany, Miranda House, University of Delhi on 5-6 September 2017 and 7-8 September 2017 respectively.

Extracurricular Activities:

MIRANDA HOUSE

- Staff Advisor (July, 2018-May, 2019 for *The Life Science Society*, Miranda House, University of Delhi.
- Accompanied the students (Botany H, IInd year) for a trip to *Yamuna Biodiversity Park* (March 15, 2019).
- Attended Open Day (Outreach Programme under the banner of India International Science Festival (IISF) on behalf of Ministry of Science & Technology and Ministry of Earth Sciences in association with Vijnana Bharati.) on 24th September, 2018 and judged the poster session at Regional Centre for Biotechnology (RCB), NCR Biotech Science Cluster, 3rd Milestone, Faridabad-Gurgaon Expressway, Faridabad - 121001, Haryana (NCR Delhi), India.
- Attended Biodiversity Conclave "Biodiversity for Everyone's Life", jointly organized by Miranda House, University of Delhi and Institute of Bioresources and Sustainable Development (IBSD), Manipur held at Miranda House, 31 August 2018, University of Delhi, Delhi.
- Accompanied the students (Life Science IIIrd year) for a trip to *Neela Hauz Biodiversity Park* (March, 2017).

ST. STEPHEN'S COLLEGE

- Active Member of Environmental Society at St. Stephen's College and started with segregation of waste (plastics), vermicomposting, promoted composting (in form of landfill), promoted recycling of paper, initiated the plantation of red edged *Dracena*, money plant, palm, *Senseviera* sp. (helps in absorbing pollutants especially carbondioxide), initiated the idea of e-waste management.
- Studied flora of St. Stephen's College under guidance of Dr. Prem Uniyal.
- Organized a Workshop in Biology "*Insight to Cella*" as part of Academic Conclave (11-13 February, 2016), that involved isolation, spooling, estimation and purity check of DNA. Overall 99 students got registered from all over Delhi University but finally 39 participated actively.

- Organized a Workshop in Biology "*Insight to Cella*" as part of Innovation Project (15-17 February, 2016), that involved isolation, estimation and purity check of DNA, RNA and proteins.

SRI AUROBINDO COLLEGE (EVENING)

- Organized a lecture on the inauguration of Eco Club - *PRATIVESH*, on the theme *Sustainable Development and Biodiversity Conservation* by Prof. K. S. Rao and Dr. Faiyaz A. Khudsar under guidance of Dr. Kusumakar Pandey at Sri Aurobindo College (Evening).
- Participated in Antardhwani "From Village Panchayat to Prime Minister"(as part of SACE). This programme involved the adoption of Kalwari village at Mewat district where I contributed towards *Agricultural Scenario and Practices* at Kalwari village.
- Member of *Swachata Abhiyan* Committee at Sri Aurobindo College (Evening).
- Member of Discipline Committee at Sri Aurobindo College (Evening).

MAITREYI COLLEGE

- Accompanied the students for a trip to *Yamuna Biodiversity Park* under guidance of Dr. Rina Majumdar (January, 2014) at Maitreyi College.

SHIVAJI COLLEGE

- Part of organizing committee for *First WDC International Conference on Empowerment of Women in Developing World* organized by *Women Development Cell, Shivaji College, University of Delhi, Delhi* in collaboration with *Women's Studies and Development Centre, University of Delhi* and *National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India*.
- Accompanied the students for a trip to *Yamuna Biodiversity Park* under guidance of Dr. Vijay Kumar (March, 2013) at Shivaji College.
- Organized *Botanical Fashion Show* (an event in Guldasta-2013) under guidance of Dr. Vijay Mohan at Shivaji College, DU (March, 2013).
- Member of Eco Club (Jan-May, 2013) at Shivaji College.

GARGI COLLEGE

- Organized Summer training workshop (under guidance of Dr. Shashi Tyagi and Dr. Priyanka Pandey) for students as part of Star College Scheme.
Contribution: Spectrophotometry, Column and Thin Layer Chromatography and complete Manual editing at Gargi College.

OTHERS

- Participated in a training workshop on Reproductive Health Education.
- Participated in NSS activities (1998-1999).
- Awarded IInd prize in Inter class debate – S. G. T. B. Khalsa college (1996-1997).
- Participated in Geography Awareness Test conducted by Delhi Bhugol Shikshak Club (Regd.) (1993-1994).
- Participated in several Quiz competitions conducted by Lion's Pratibha (1992-1993).
- Participated in "*The Race Against Time*" held on Vinobha Jayanti in New Delhi organized by "Gandhi In Action".

Personal Information:

Date of Birth : 17 January, 1979
Sex : Female
Marital Status : Single
Father's Name : Mr. S. K. Beri

Declaration

I hereby declare that the information given above is true and correct to the best of my knowledge and belief.