

Centre for Research

Maitreyi College, University of Delhi (July 2022 to May, 2023)

Another thriving year for Centre for Research (CFR), Maitreyi College to support and foster the research acumen of young undergraduate researchers. The Centre puts its best efforts to harness the scientific temperament of the students by organising research oriented activities like the Summer Internship Programme (SIP), Annual Research Programme (ARP), Avlokan- The student presentation session, orientation programme, Training Workshop and Equinox- The Annual International Conference. Maintaining its commitment towards quality research, Centre for Research publishes its peer-reviewed, multidisciplinary, open-access e-journal *Vantage: Journal of Thematic Analysis*. The journal is a true representation of amalgamated research collection from various domains including sciences and social sciences.

1. A total of 21 projects were successfully carried out and completed under the **Summer Internship Programme** 2021-22. The approved projects are carried out during the summer break (May-July, 2022), under the supervision of the faculty members. The project reports were scrutinised and evaluated by the external subject experts. The students got an opportunity to present their research work in front of the jury during Avlokan- the student presentation session. This research programme plays a crucial role in enhancing the research perspective, technical writing skills, soft skills etc. of the students.

List of projects carried out during SIP 2021-22

S. No.	CODE	DEPARTMENT	MENTOR	TITLE	MENTEES
1	SIP21-22/01	Botany	Dr Rama Sisodia, Dr Shweta Sharma	Efficacy of Selected Seed Priming Agents on Seed Germination and Plant Growth Under Salinity Stress in <i>Vigna radiata</i> and <i>Oryza sativa</i>	Vedanti Garg (B.Sc. (Prog) Life Sciences II Yr), Sonia Chauhan (B.Sc. (Prog) Life Sciences II Yr), Naiya Chauhan (B.Sc. (Prog) Life Sciences II Yr), Ishani Mallick (B.Sc. (Prog) Life Sciences II Yr),
2	SIP21-22/03	Botany	Dr Monika Heikrujam, Dr Mansi Gogna, Dr Rama Sisodia	Qualitative and quantitative analysis of plant pigment anthocyanins from selected flowering plants	Kaveri Choudhary B.Sc Life Science III Year, Riya Uniyal B.Sc Life Science III Year, Kajal Senger B.Sc Life Science III Year, Yaiveinai Ngade D B.Sc Life Science

					III Year, Nandini Jajoria B.Sc Life Science III Year, Hrishita Sharma B.Sc Life Science III Year
3	SIP21- 22/04	Chemistry	Dr. Kiran Soni, Dr. Swarndee p Kaur Sethi, Dr. Gita Batra Narula	Exploring the role of structurally engineered nano-sized sustainable materials for remediation of contaminated water samples	Bagmita Biswas, Gitika Sharma, Isha Chopra, Pragya Narain, Priyanka Rihel (B.Sc. Life Sciences, III year), (B.Sc. Life Sciences Graduate), Taniya Kaushik (B.Sc. Life Sciences, III year)
4	SIP21- 22/05	Chemistry	Dr. Swarndee p Kaur Sethi, Dr. Gita Batra Narula, Dr.Kiran Soni , Pooja Baweja	Fabricated natural hydrogels and their potential for agricultural applications	Ms. Anita Bomboriya, Ms. Isha Bedwal, Ms. Kanishka Kohli, Ms. Nancy Ghai, Ms. Prachi, Ms. Uma Rani (Department of Chemistry), Ms. Geetanshi Dang, Ms. Savina (Department of Botany)
5	SIP21- 22/10	Computer Science	Dr. Manju Bhardwaj, Dr. Shikha Badhani	SENTIMENT ANALYSIS OF INDIAN TWEETS DURING COVID-19	Priya Mishra, Maulika Sharma, B.Sc Physical Sciences IV Sem
6	SIP21- 22/11	Computer Science	Dr Veena Ghuriani	Credibility Analysis of Information on Social Media Platforms using Machine Learning	Ms Shruti Khurana, BA(P) VI Sem, Ms Shivangi Bhatia, BA(P) VI Sem
7	SIP21- 22/12	Computer Science	Ms. Rupali Ahuja	Trends of Online Degree in India: Challenges, Issues and opportunities	Rupali Ahuja (Department of Computer Science), Lavanya Bhat, Janhavi Khandelwal, Devika Ahlawa, B.A Programme (Computer Applications + Economics), First year
8	SIP21- 22/13	Computer Science	Ms. Rupali Ahuja Dr. Shweta	An Analysis of Crime against Women in ever Expanding Digital	Tanya Choubey, Priyanshi Jain, Tanusha Jain, Muskan Verma, B.Sc. Physical

			Sankhwar	Space	Science with Computer Science, 3rd year
9	SIP21-22/14	Computer Science	Dr. Shweta Sankhwar, Ms. Tripti Agarwal	Analysis of Toxic Social Media Text using Deep Learning Techniques	Tripti Agrawal Computer Science, Tanya Chaudhary and Shruti Sharma from B.Sc. Physical Science with Computer Science, 3rd year; Ruchika and Aaditri Saraswat from B.Sc. Physical Science with Computer Science, 1st year
10	SIP21-22/15	Economics	Dr Saroj Rani	IMPACT OF ARTIFICIAL INTELLIGENCE ON THE INDIAN ECONOMY AND A CASE STUDY OF CHINA	Aarushi Shanker, Riju Garg (B.A(Hons.) Economics
11	SIP21-22/19	Mathematics	Ms Rajni Gupta, Dr Khushboo Bussi	Blockchain in Research	Kritika Kanojia, Sakshi Punia, Saloni Tiwari, Srishti Uniyal All B.Sc (Hons) Mathematics III yr
12	SIP21-22/20	Mathematics	Ms. Nikita Mittal, Ms. Monika Meena	An Analysis With A Mathematical Approach - Major Reasons Behind The Crisis Of Yes Bank From The Indian Stock Market	Ms. Nikita Mittal and Ms. Monika Meena- Department of Mathematics Students: Antra Sharma, Ananya Paliwal, Shambhavi Thakur, Nandini Kapoor- BA Economics(H), Third year
13	SIP21-22/21	Physics	Dr Parul Yadav, Dr Mansi Dhingra, Dr Neha Gupta	Designing, Monitoring and Optimization of solar energy for maximum power	Ms. Bhavna, Ms. Ria Goel, Ms. Ritika, Ms. Simrat , Ms. Vaishali Bagauli, Ms. Anshita, Ms. Jeu1B. Sc. (H) Physics II year, Maitreyi College, University of Delhi last two students are from B. Sc. (H) Physics I year,

					Maitreyi College
14	SIP21-22/22	Physics	Dr. Prajwalit Shikha, Ritu Dhingra	Battery Capacity: Measurement and Analysis	Urvashi Sangrola, Pranshi Mathur, Astha Aggarwal, Preeti, Department of Physics, Maitreyi College University of Delhi; B.Sc.(H) Physics 3rd Year
15	SIP21-22/24	Physics	Dr. Apoorva Verma, Dr. Ritu Dhingra,	TO DESIGN AND BUILD A PORTABLE GAUSSMETER	Amanjot, Shiva Raj, Soumya Bajpai , Ananya Course-B.Sc physics (H) 1st year
16	SIP21-22/25	Physics	Dr. Neelam Singh	Electromagnetics of SERS Tailored with SPR using Anisotropic Nanoparticle System near a molecule: A First Principle Account	Dhruvi Agrawal, Mansi Tewatia, B.Sc(H) Physics, IIInd year
17	SIP21-22/26	Physics	Dr Parul Yadav, Dr Shalini lumb Talwar, Dr Mansi Dhingra	Quantum computing: Introduction, fundamentals and understanding of Deutsch Jozsa Algorithm	Ms. Sharanya Renjit, Ms. Vaishali Sharma, Ms. Purnima, Ms. Sweta Singh, Ms. Rishika,
18	SIP21-22/27	Physics	Dr. Prajwalit Shikha, Dr.Sumit	Investigation of Structural and Optical Properties of Solution Grown Glycine Glutaric Acid Single Crystal	Avnika Tyagi, Bhawna Verma, Kirti Bhagia, Megha Bhardwaj, Shreya Chaturvedi, and Nimisha Sagar Department of Physics, Maitreyi College University of Delhi, New Delhi-110021, India Details of Students: Course: B.Sc. (H) Physics, Year: second

19	SIP21-22/32	Sociology	Dr. Aruna Grover	The Impact of the Polycystic Ovarian Syndrome (PCOS) on Quality of Life of Affected Women in India: A Sociological Perspective	Ms. Ria Rao BA (Hons) Sociology 2nd year, Ms. Kunika Tyagi BA (Hons) Sociology 2nd year
20	SIP21-22/34	Zoology	Dr. Luni, Dr. Tejendra Kumar	Study of hair loss as a side effect of post-COVID-19 and its vaccination	Ms. Ayushi Wadhwa [B.Sc. (Prog.) Life Sciences 3rd year] - 2020/1629. Ms. Vanshika Attrish [B.Sc. (Prog.) Life Sciences 3rd year] - 2020/1631. Ms. Gayatri Pani [B.Sc. (Prog.) Life Sciences 3rd year] - 2020/1766.
21	SIP21-22/35	Zoology	Dr Meena Yadav, Dr Brototi Roy	Knowledge, Awareness and Practice of Contraceptives among Women of reproductive age group in Delhi-NCR	Anshu Rana, Shruti Kaushik and Purva Aggarwal

2. Avlokan

The student presentations . **Avlokan** was organized in three sessions in September, 2022. The selected 19 projects out of total 22 projects of SIP 2022-23, carried out during May-June, 2022, were presented before external jury members. In **Avlokan Session I**, five projects, SIP 21-22/01, SIP 21-22/03, SIP 21-22/34, SIP, 21-22/35, and SIP 21-22/32 were presented in front of Jury members Dr. Nirala Ramchiary from School of Life Sciences, Jawahar Lal Nehru University and Dr. Vikas Bajpai from the Centre for Social Medicine, Jawaharlal Nehru University, Delhi. In **Avlokan Session II**, eight Projects i.e., SIP 21-22/10, SIP 21-22/11, SIP 21-22/12, SIP, 21-22/13, SIP 21-22/14, SIP 21-22/15, SIP, 21-22/19, and SIP 21-22/20, were presented in front of Jury members Prof. Shobha Bagai, from Cluster Innovation Centre, University of Delhi and Dr. Ankit Rajpal, from Department of Computer Science, University of Delhi while in **Session III** a total of 6 projects i.e., SIP 21-22/04, SIP 21-22/21, SIP 21-22/22, SIP, 21-22/24, SIP 21-22/26, and SIP 21-22/27 were presented in front of Prof. Annapoorni, from the department of Physics and Astrophysics, University of Delhi and Prof. Rakesh Parashar from the Department of Chemistry, University of Delhi. There were more than 200 participants.

3. The proposals for **Annual Research Programme (ARP) 2022** were called twice i.e., in January , 2023 and May-June, 2022. All the projects are in progress.

Research Projects under Progress under ARP July 2022

S. No.	Code	Department	Title	PIs	Co-PIs	Mentees
1	ARP_Jul 2022_01	Botany	Influence Of Phytohormones On Abiotic Stress Tolerance In Agriculturally Important Crop Plants	Dr. Sandeepa Singh	Dr. Mansi Gogna	Nandini Rajput, Savina Jakhad, Geetanshi Dang, Harshita Kataria (B.Sc. (H) Botany III yr)
2	ARP_Jul 2022_02	Chemistry	Sustainable Nano Polymeric Composites/Hybrids For Wastewater Treatment	Dr. Gazala Ruhi	Pinkey Bajaj Gandhi, Haritma Chopra, and I B Singh (external expert)	Nayasha Mallik, Sneha Kohli, Aleena Shakreen, Panchami Murlidharan, Anjali Bhadauriya, Riti, Mahima (B.Sc. (H) Chemistry IIyr)
3	ARP_Jul 2022_03	Hindi	बिहार और उत्तर प्रदेश की प्रमुख लोक नाट्य शैली 'कथा- गायन- वाचन शैली' के बिदेसिया और नौटंकी की परम्परा का तुलनात्मक अध्ययन (1930 से अबतक)	Dr Mamta Dhawan		Binita and Anjali Gupta (BA (H) Hindi III year)
4	ARP_Jul 2022_08	Chemistry and Botany	Fabrication Of Crosslinked Nanoparticles By Greener Method And Their Potential For Agricultural Applications	Dr. Gita Batra Narula,	Dr. Pooja Baweja, Dr. Kiran Soni	Anita Kumari, Nancy Ghai, Isha Bedwal, Uma Rani (B.Sc Chem H III year); Savina (BSc (H) Botany III yr)

Research Projects under Progress under ARP January 2023

S. No	Code	Department	Title	PIs	Co-PIs	Mentees
1	ARP_Jan2023_01	Zoology	Purification of fish recombinant asprosin and study it's role in fish reproduction in spotted snakehead Channa punctata	Dr. Brototi Roy, Zoology Department, Maitreyi College, University of Delhi	Dr. Jyoti Singh, Zoology Department, Maitreyi College, University of Delhi	Kajal Teotia, B.Sc. (H) Zoology, II Year, Khushi Tyagi, B.Sc. (H) Zoology, 2nd Year
2	ARP_Jan2023_02	Zoology	Quick Responsive Coding of specimens and slides and other preserved collections in Zoology museum of Maitreyi College, University of Delhi	Dr. Jaspreet Kaur, Zoology Department, Maitreyi College, University of Delhi	Prof. Renu Gupta, Professor, Zoology Department, Dr. Tejendra Kumar, Assistant Professor, Zoology Department	Pratibha Kapkoti, Jagriti Mehta, Siddhi Gupta, Astha Kumari (I yr, B.Sc. (H). Zoology, Sweta Rajakk (II yr, B.Sc. (H). Zoology
3	ARP_Jan2023_04	Computer Science	Blockchain and Cryptocurrency - A New Frontier in Financial Technology	Dr. Shikha Badhani, Deptt. of Computer Science	NA	Ojasvi Yadav, BA Prog(Computer Science and Economics), II Yr and Rinkal Bhadauria, BA Prog (Computer Science and Economics), II

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4. The second Annual International Conference, **Equinox 2022**, was organized by the Centre for Research (CFR), Maitreyi College, University of Delhi under the aegis of *Vantage: Journal of Thematic Analysis* on the theme, “*The Expanding Frontiers of Knowledge*” from **August 11-13, 2022**. The three-day international conference, shed light on one of the key pedagogical initiatives of Maitreyi college i.e., research. The theme takes the spirit of inquiry further as it delves into the process of knowledge creation, and its contribution towards building a progressive society. **Professor Yogesh Singh**, Hon’ble Vice Chancellor, University of Delhi, was the Chief Guest. The conference included talks by eminent speakers such as Prof. K. Muralidhar (Indian Biologist and retired professor, Department of Zoology, University of Delhi), Prof. Manosh Choudhury (Department of Anthropology, Jahangir University, Bangladesh), Sopan Joshi (Senior Journalist), Imrana Qadir, (Former Professor, CSMP, Jawaharlal Nehru University), Prof Amalendu Jyotishi (Azim Premji University), Prof. Anindya Sinha (Indian Primatologist; National Institute of Advanced Studies, India), Prof. Aarti Grover (School of Planning and Architecture, New Delhi), Prof. Miguel Nicolelis (Brazilian Scientist, physician and Duke School of Medicine Professor in Neuroscience at Duke University), Dr Ritambhara Hebbar (School of Developmental Studies, TISS, Mumbai) and Prof. Prabhat Ranjan (Vice Chancellor, D Y Patil International University, Akurdi, Pune). More than 550 participants participated in the conference.
5. A total of **17 educational visits** were organised in the college by various departments. The educational expeditions to promote experiential learning and research acumen among undergraduate students, fostering social and emotional development and exposure to innovative work settings.

List of Educational trips organized by various departments of Maitreyi College

S. No.	Department	Date	Destination	No. of students visited
1.	Sanskrit	28-01- 2023	Hastinapur, UP	26
2.	History	20-01- 2023	Feroz Shah Kotla Fort	115
3.	Economics	21-02-2023	Taj Mahal, Agra, Uttar Pradesh	49
4.	Sociology	25/02/2023 to 02/03/2023	Udaipur, Rajasthan.	35
5.	पंजाबी एवं हिन्दी	01-02-2023	नेहरु पलेनिटोरीयम, कर्तव्य पथ एवं सुन्दर नर्सरी	Punjabi 10, Hindi 96
6.	Commerce	24-02- 2023	Securities Exchange Board of India	75

7.	English	18-02-2023	National Museum and Sunder Nursery	44
8.	Chemistry	24-01- 2023	Mother Dairy Plant	63
9.	Botany	25-01-2023	Neela Hauz Biodiversity Park	30
10.	Botany	12-01-2023	National Institute for Plant Genome Research (NIPGR), New Delhi	20
11.	Computer Science	21-04- 2023	National Science Centre and Pradhan Mantri Sangrahalaya	47
12.	Physics	01-03-2023	NTPC, Dadri	64
13.	Mathematics	20-01-2023	Bharat Darshan Park, Punjabi Bagh	95
14.	Zoology	6-02- 2023	Sultanpur National Park	224
15.	ORGANIZED BY: Centre for Himalayan Studies (University of Delhi) RESOURCE PERSON: Dr. Rohit Singh, Fulbright-Nehru Scholar, University of North Carolina, USA	18-08-2022	VISIT TO A SEMINAR ON "SIGNIFICANCE OF RELIGIOUS HEALERS IN THE HIMALAYAS"	11
16.	Political Science and Department of Chemistry	1-03- 2023	villages of Gautam Buddha Nagar; Mangroli and Melwa Gopalgarh	33
17.	हिंदी	01 -02-2023	प्रधानमंत्री संग्राहलय	101

6. Two issues of **Vantage: Journal of Thematic Analysis** were published during 2022- 23 i.e., the October, 2022 (<https://journalvantage-maitreyi.com/vol-3-issue-2-october-2022.php>) and April, 2023 issues (<https://journalvantage-maitreyi.com/vol-4-issue-1-april-2023.php>) on the theme "The Expanding Frontiers of Knowledge".

7. On 28th March, 2023, the Centre for Research (CFR), in collaboration with Advisory Committee for Professional Grooming (ACPG) organized a workshop-cum-orientation programme on "Orientation and Research Methodology" in the New Auditorium, Maitreyi College, where

students were apprised of the various programmes run by the CFR and ACPG. The Principal, Prof. Haritma Chopra, introduced students to the Centre for Research (CFR) and its programs, encouraging them to submit research proposals for the upcoming Summer Internship Projects (SIPs). She also discussed the college's new initiatives under the "Unnat Bharat Abhiyan" scheme, which aims to provide higher educational institutions to work with rural India to identify development challenges and provide sustainable growth solutions. Dr Brototi Roy, Department of Zoology, introduced students to research projects, the importance of undergraduate research, and the annual events "Avlokan" and "Equinox." Dr Neeraj Kumar, Department of Sociology, discussed the moral foundations of scientific research, including ethics, plagiarism, and citation. Dr Tejendra Kumar taught students about statistical analysis using SPSS software, while Dr Gopi Devdutt Tripathy introduced the theme for the upcoming Summer Internship Programme, "*Research, Development and Social Transformation*." The event aimed to educate students on the importance of research, citation, and referencing in academic settings. Total Number of participants was 210.

8. The Centre for Research (CFR) organised two special lectures during 2022-23. On 7th December, 2022, CFR in collaboration with Aashayein, an initiative of the Department of Sociology at Maitreyi College, organized a lecture on "*Well Being is a Skill*" in a hybrid mode. **Professor Richard Davidson**, William James and Vilas Professor of Psychology and Psychiatry at University of Wisconsin-Madison and Founder and Director, Center for Healthy Minds, renowned for his work on emotion and the brain, discussed the concept of well-being as a skill that can be harnessed through contemplative neuroscience. He highlighted the importance of nurturing kindness to counter mental health crises like the viral pandemic and the four pillars of well-being: awareness, connection, insight, and purpose. The event attracted attendees from various universities and colleges across India and the total number of participants was 226. On 17th January, 2022, CFR organised another Special lecture on the "*Use of Yoga to Develop Scientific Epistemology for Integrative Health*" by **Prof. Bal Ram Singh** from Institute of Advanced Sciences, Botulinum Research Centre, Dartmouth MA, USA at Maitreyi College, University of Delhi. Prof. Singh discussed holistic goals, yoga, and integrative health, emphasizing the importance of astanga yoga, self-understanding, and concepts of swadharma, independence, natural action, and health. He also highlighted the NEP as a prime example of holistic education, emphasizing the role of being within oneself for true equality. Total number of participants in the event was 157.