Centre for Research

Maitreyi College, University of Delhi

Annual report

(July 2023 to June, 2024)

The Centre for Research (CFR) along with the Advisory Committee for Professional grooming (ACPG) is committed to nurturing profound enthusiasm towards research among students and faculty. CFR and ACPG organise several programmes and events. CFR publishes a peer-reviewed, biannual, multidisciplinary, open-access e-journal 'Vantage: Journal of Thematic Analysis'.

1. Summer Internship Programme (SIP)

In **SIP 2022-23**, 30 projects were completed (an increase of 30% from the previous year)-25 projects from sciences and 5 from social sciences and humanities. They were conducted between May and July 2023. 58 faculty members trained 108 students. The theme of SIP 2022-23 was "Research Development and Social Transformation".

After successful completion of SIP projects, the projects were evaluated and selected projects (those scoring above 80%) were given a chance to present their work in **Avlokan 2023** which was organised on 3rd November, 2023. The students presented their work before the external jury. Four parallel sessions of Avlokan were organised-six presentations in the first session, eight presentations in second session. Five presentations in the third session and seven presentations in the fourth session. The jury members for these sessions were Prof. Rita Kakkar (Former Dean, Faculty of Science, DU) and Dr. Rajendra Dhaka (Department of Physics, IIT Delhi); Dr. Jogeshwar Sachin Purohit (Cluster Innovation Centre, DU), and Dr. Abdul Kareem (School of Sciences, IGNOU); Dr. Shashi Tiwari (Former Professor of Sanskrit at Maitreyi College, DU) and Prof. Jaspal Kaur (Department of Punjabi, DU); Dr Ankit Rajpal (Department of Computer Science, DU) and Dr. Surendra Kumar (Department of Mathematics, DU) respectively.

List of projects carried out during SIP 2022-23

S. No.	Code	Title of the Project	Mentor/s	Mentor's Departm ent	Details of Students (Name, course & year)
1		•	Dr Ankita Sehrawat, Dr Pooja Baweja		Archana, Prachi Panwar: B.Sc. (H) Botany, 2nd yr Preeti, Kanika Joshi: B.Sc. Life Sciences, 2nd yr

2	SIP22- 23/02	Pharmacovigilant Analysis And Comparison Between Ayurveda, Siddha, Homeopathy And Self-Made Polyherbal Formulations And Repurposing Them For Disease Management	Dr. Sandeepa Singh, dr. Mansi Gogna	Botany	Joyeeta Mondal, Deepti: B.Sc. Botany (Hons.), 2nd year Aakangksha Goswami, Nikhita Awasthi: B.Sc. Botany (Hons.), 1st yr
3	SIP22- 23/03	In- Vitro Assessment Of Antibacterial Activity In Solvent Extracts Of Leaves From Selected Plants	Dr. Sandeepa Singh, dr. Vandana Mourya	Botany	Nishi, Bedika: B.Sc. (H) Botany (2nd Year) Niharika Singh, Monika: B.Sc. Life Science (2nd Year)
4	SIP22- 23/04	Copigmentation- based enhancement of stability of Anthocyanin isolates from selected flowering plants	Dr Monika Heikrujam, Dr Manis Gogna, Dr Rama Sisodia	Botany	Kaveri Choudhary, Urvashi Sehrawat, Nivedita Rai, Jyotsna Mishra, Monika: B.Sc. (P) Life Science 2nd yr
5	SIP22- 23/05	Exploring spatial variation in chemical composition of selected medicinal plants	Dr Shweta Sharma; Dr Rama Sisodia	Botany	Sana Ahmad, Dishita Jain, Anushika, Soni Jakhmola: B. Sc. Life Sciences 2nd Yr
6	SIP22- 23/06	Target Identification, Docking Studies, and Pharmacokinetic Evaluation of Ayurvedic Compounds	Dr. Ritu Gaba; Dr. Ankita Chaudhary; Dr. Anshika Mittal	Chemistr y	Nyasha Malik, Sneha Kohli, Aleena Shakreen: B.Sc. (Hons.) Chemistry, II year Taniya Patwal, Ishita Bhadana, Prakriti Gusain: B. Sc. (H) Chemistry, I year
7	SIP22- 23/07	Treatment of Laboratory Waste With Bio- Substitutes	Dr. Gita Batra Narula, Dr. Kiran Soni, Dr. Swarndeep Kaur Sethi, Dr. Ritu Dhingra	Chemistr y and Physics	Alka Shukla, Divyanshi Upadhyay, Nisha Sharma, Pritam, Suhavani Singh: B.Sc. Hons. (Chemistry) II year Amanjot, Jeau Mishr: B.Sc. Hons. (Physics) II year

8	SIP22-23 /08	Tracing The Evolution Of Msme Sector In India	Ms. Apurva Setia	Commerc e	Aarushi Anand, Khushi Gaba: B.Com. hons - 2nd year
9	SIP22- 23/09	The global injustice of Fast Fashion	Ms. Apurva Setia	Commerc e	Shrreya Dutta, Ashlyn Dhingra : B.com(H) 2nd yr
10	SIP22-23 /10	Reviewing the Relevance of Influencer Marketing in the Food and Beverage Industry for Indian Generation Z Consumer	Dr. Jyotsna and Ms. Karishma Arora	Commerc	Priyamvada Rajpal, Vanshika Dutt, Radhikka Bajpai, Aakanksha Agarwal: B.Com. Hons, 2nd Yr
11	SIP22- 23/11	Emerging Technologies and Creator Economy: A new linkage for Creative and Sustainable Growth Solutions	Dr. Veena Ghuriani, Dr. Jyotsna Talreja Wassan	Compute r Science	E Harshitha, Palak Pahwa: BA(P) VI Sem Sneha Srivastava: B.Sc. (P) PS I Sem Janhvi Sharma: BSc (H) I Sem
12	SIP22- 23/12	DeFi: Challenges, Opportunities and Risk Analysis of Adoption of Decentralized Finance Application	Ms. Rupali Ahuja	Compute r Science	Janhavi Khandelwal, Anjali: B.A (P) 2nd yr
13	SIP22- 23/13	WEB 3.0: TRANSFORMING INTERACTIONS ON THE WEB	Ms. Rupali Ahuja		Riddhi Mehta, Muskaan Dhingra : B.A. (P) (Computer Applications + Mathematics) II yr
14	SIP22- 23/14	Know What They Say : An AI based Communication Bridge Between Deaf and Hearing	Dr. Manju Bhardwaj and Dr. Shweta Sankhwar	Compute r Science	Vishwa Bharti, Anchal Yadav, Annu, Nishi Thakur: B.Sc. (Prog) Physical Sciences with Computer Science, 2nd yr
15	SIP22- 23/15	Reinforcement learning in Robotics: A comprehensive study	Dr Manju Bhardwaj	Compute r Science	Aaditri, Bhavya Singh: B.Sc. Phy. Sci. with Comp Sc 2nd yr
16	SIP22- 23/16	Can Nash Equilibrium be used to move towards the social change of Global	Ms. N. SHRADHA VARMA	Economi cs	Nimeesha Patidar: B.A. (H) Economics 2nd Yr Anshika Chaudhary: B.A. (P) (Economics+ Computer Applications) 2 nd yr

		Peace?			
17	SIP22- 23/17	Sustainable treatment of textile wastewater using Constructed Wetland -Microbial Fuel Cells	Ms. Archana and Dr. Pooja Baweja	Environ mental Science and Botany	Neha Singh, Prachi Bhandari : B.Sc. Botany Hons. 2 nd Yr Raksha, Kashish Singh Year: B.Sc. (P) Life Sciences 1 st yr
18	SIP22- 23/18	बदलते सामाजिक परिवेश में वयोवृद्ध वर्ग	Dr. Anita Devi	Hindi	नेहा कुमारी, त्रिवेदी, लक्ष्मी कुमारी: बी.ए.हिंदी विशेष (द्वितीय वर्ष)
19	SIP22- 23/19	सामाजिक बदलाव में फिल्मों का योगदान"	Dr. Anita Devi and Dr. Ranjeet Yadav	Hindi	प्रतिमा मौर्या, दिशा सिंह, कृतिका मिश्रा, प्रगति कुमारी : विभाग: हिंदी विशेष
20	SIP22- 23/20	AI WARS : Google and ChatGPT in a Battle for Predominance	Ms. Rajni Gupta and Dr. Pawan Kumar	Mathema tics	Nivedita Panwar, Aakanksha, Akshita Singh, Muskan: B.Sc. Mathematics (H), II year
21	SIP22- 23/21	Research Proposal: The potential of technological innovations, AI & Machine learning in social transformation	Dr. Neetu Arneja and Mr. Saurav Kumar	Mathema tics	Niharika Pandey, Siya Dahiya, Sejal Gupta, Anshika Morya: B.Sc.(H) Maths, 2nd year
22	SIP22- 23/22	Thin films as an electrical transducer for an Arduino based electrochemical sensor	Dr. Mansi Dhingra, Dr. Parul Yadav, Dr. Shalini Lumb Talwar	Physics	Vaishali Bagauli, Bhavna, Ria Goel, Sharanya Renjit, Pranshi Mathur: B. Sc. (H) Physics III yr Soumya Bajpai: B. Sc. (H) Physics II year
23	SIP22- 23/23	Optimization of shape and size of ZnO nanoparticles for improved antibacterial properties	Dr Parul Yadav, Dr Mansi Dhingra, Dr Ritu Dhingra, Dr Gazala Ruhi	Physics+ Chemistr y	Vaishali Sharma, Aditi Pandey, Urvashi Sangrola, Sweta Singh, Purnima: B.Sc. (H) Physics IIIrd Year) Simran: B.Sc. (H) Physics IInd Year
24	SIP22- 23/24	Soil Resistivity Test for Green Field Applications	Dr Prajwalit Shikha, Dr Poonam Juneja	Physics	Saniya, Karina, Kashish Mishra, Neelakshi Lakra: B.Sc.(H) Physics I Year

26 SIP22- Development of Women through Local government in rural area of District Saharanpur (Uttar Pradesh) 27 SIP22- Lok Munch toh Adhunik Punjabi Rangmanch di Yatra 28 SIP22- षड् ऋतुचर्या का वैज्ञानिक महत्व	Dr. Harmeet Kaur, Dr.	Political Science Punjabi Sanskrit	Kaukab: B.A. Hons Political Science, 2nd year Bipasha, Divya Gupta: B.A. (P) 2 nd yr Anjali Tanwar, Shivani Kumari,
23/27 Adhunik Punjabi Rangmanch di Yatra 28 SIP22- षड् ऋतुचर्या का	Kaur, Dr. Sarika Sharma Dr. Sushil Kumari,	Te	yr Anjali Tanwar, Shivani Kumari,
	Kumari,	Sanskrit	
	Kumari		Ruchi, Pinki: B.A. Sanskrit (H), 3rd yr
29 SIP22- Ovicidal and oviposition deterrent activity of Carica papaya leaf extract against dengue vector, Aedes aegypti	Dr. A. Vineetha, Dr. Tejendra Kumar	Zoology	Shristi Singh, Suryanshi Anand, Jael Alma Chemjong: B.Sc. (Hons.) Zoology, 2 nd yr
30 SIP22- Premenstrual 23/30 Syndrome: Awareness and role of physical activities	1	Zoology	Suryanshi Anand, Arya Singh , B.Sc. (hons) Zoology IInd Year Anvi Kaushik, Ishani: B.Sc. Life Sciences IInd yr
Total 30	ege, Univ		108

Poster of Avlokan 2023



2. Annual Research Programme (ARP)

The **Annual Research Programme** (**ARP**) is biannual and in the year 2023-24 proposals were invited in two cycles i.e., one cycle started in July 2023 and another in January 2024. A total of 3 projects (8 faculty: 15 students) were successfully carried out under ARP-July2023, while 6 projects (9 faculty members and 23 students) have been approved for ARP-January2024.

List of Projects approved for Annual Research Programme (ARP), July 2023

S.	Project	Department	Title of the	Principal	Students
No.	Code		Project	Investigator/Co-	
				Principal	
				Investigator	
1	ARP_Jul	Chemistry	Synthesis,	Dr Lata Vodwal,	Muskan, Mihika
	2023_01		characterization,	Dr Pratibha	Bidhuri, Rajpriya,
			and in silico	Chaudhary, Dr	Lucky Sharma,
			identification of	Pinkey B. Gandhi	Sanya, Kashish
			imidazole-thiazole		(B.Sc. Life Science,
			based		IInd year)
			pharmacophores		

2	ARP_Jul	Zoology	Therapeutic role	Dr Luni, Dr Meena	Himani Chaudhary,
	2023_02		of selected	Yadav	Venuka Jha, Kriti
			phytochemicals in		Soni, Prashansha,
			fish		Preeti (B.Sc. Life
					Science IInd year)
3	ARP_Jul	Interdisciplin	Sustainable	Dr Archana Yadav,	Neha Singh, Prachi
	2023_03	ary	treatment of	Dr Pooja Baweja,	Bhandari (BSc Hons
		(Environment	textile wastewater	Dr Poonam Juneja	Botany IInd year);
		al science,	using Constructed		Raksha, Kashish
		Botany and	Wetland -		Singh (B.Sc. Life
		Physics)	Microbial Fuel	The second second	Science Ist year)
			Cells	Re	

List of Projects approved for Annual Research Programme (ARP), January 2024

S. No.	Project Code	Department	Title of the Project	Principal Investigator/Co- Principal Investigator	Students	
	ARP_Jan2024_02	Hindi	लोकनाटकों का वर्तमान प्रयोगधर्मी स्वरूप : विशेष संदर्भ रामलीला,रासलीला,पंडवानी और माच	Dr Mamta Dhawan	Sakshi (BA Hons Hindi IInd year); 2. Anshika (BA Hons Hindi Ist year)	
	ARP_Jan2024_03	Zoology	Progesterone as a pollutant in the aquatic environment: Implications in immunity and survival of fish	it V	. Khushi kumari 2. Harmandeep Kaur Suhasini(1428), 4. Manisha Rani Nayak(908) (B.Sc. Hons Zoology IInd year)	
	ARP_Jan2024_04	Hindi	महिला नाटककारों के नाटकों में विद्रोह का स्वर (संदर्भ - 2000 के बाद के नाटक)	Dr Anita Devi	I. Neha Kumari, Sakshi Trivedi , 3. Nisha Kumari (BA Hons Hindi IIIrd year); Anchal Jha (BA Hons Hindi Ist year)	

ARP_Jan2024_06	Computer Science	Know What They Say: An AI based Communication Bridge Between Hearing impaired and Hearing enabled	Dr Manju Bhardwaj Dr Shweta Sankhwar	Vishwa Bharti, (B.Sc. Physical Science IIIrd year); Harveen Kaur, Shireen, Shreya, Sneha Srivastava (B.Sc. Physical Science IInd year)
ARP_Jan2024_07	Chemistry	Biosorption of heavy metal ions from laboratory generated waste solutions using inhouse Biopeels	Dr Haritma Chopra Dr Geeta Batra Narula	Shweta Yadav, Tannu, Kumari Monika, Pallavi Singh,Anju, Shreya Makkar (B.Sc. Hons Chemistry)
ARP_Jan2024_08	Chemistry	Investigation of a new family of oxide ion and/or proton conductors for solid oxide fuel cell and solid oxide electrolyzer.	Dr Rajni Johar Chhatwal	Disha Okhera , Manvi Sagar (B.Sc. Hons Chemistry IInd year)

3. 'Vocal for Local' Programme

CFR initiated a new programme 'Vocal for Local' from 2023-24. The programme focuses on projects involving mapping, documentation, or similar activities to enrich our understanding of the campus. Three projects have been approved for this program, starting in March 2024.

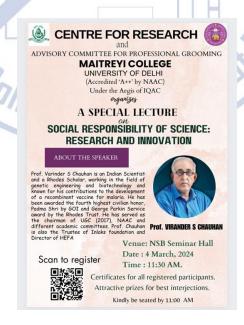
Projects approved under 'Vocal for Local' Programme 2024

S.	Project	Departme	Title of the Project	Principal	Students
No.	Code	nt		Investigator/Co- Principal	
				Investigator	
1	VFL202	Botany	Polymer	Dr Monika	Yasmin, Himanshi
	3_01		Encapsulation for	Heikrujam, Dr	Yadav, Renu Sharma,
			Sustainable	Mansi Gogna, Dr	Aakansha Jaipuriar
			Preservation of	Vandana	(B.Sc. Life Science II
			Economically		Year); Seemu, Tanisha
			Important Plant		Rawat (B.Sc. Hons
			Parts, Herbarium		Botany II Year)

			and Museum Specimens: An Approach for Long- Term Conservation		
2	VFL202 3_02	Botany and Chemistry	QR Coding of Maitreyi College Perennials Showing their Identifying Features and Air Pollution Tolerance Index	Dr Ankita Sehrawat, Dr Pooja Baweja, Prof. Haritma Chopra	Neha Joshi, Jasmine Sharma, Muskan, (B.Sc. Life Science II Year); Nikhita Awasthee, Pritee kumari, Neha Jha (B.Sc. Hons Botany II Year)
3	VFL202 3_03	Physics	Designing of cost efficient Photoluminescence Spectrophotometer	Dr. Parul Yadav, Dr. Shalini Lumb Talwar, Dr. Mansi Dhingra	Ms Soumya Bajpai, Yuvika Thakur (B.Sc. Hons Physics III Year); Lakshita, (B.Sc. Hons Physics II Year)

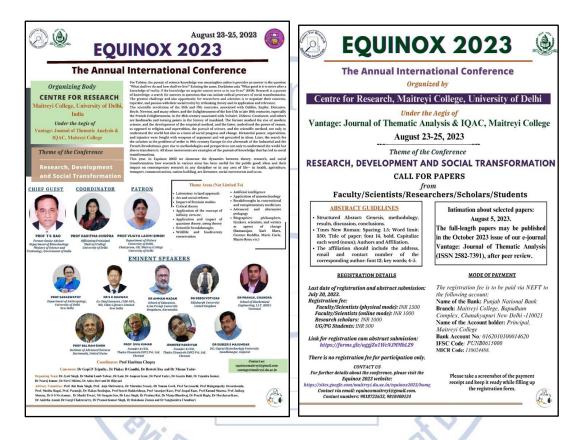
4. Special lecture

On 4th March, Centre for Research organized a **special lecture** on the topic "Social Responsibility of Science, Research and Innovation". The speaker for the lecture was Prof. Virander S Chauhan, Padma Shri and a Rhodes Scholar who is well known for his contributions in the development of a recombinant vaccine for malaria. Presently serving as the Trustee of Inlaks Foundation and Director of HEFA.



5. Equinox 2023: 3rd Annual International Conference

CFR under the aegis of *Vantage: Journal of Thematic Analysis* organised **Equinox 2023** from August 23-25, 2023 on the theme 'Research development and social transformation'. Prof. Balaram Pani (Dean of Colleges, DU) was the Guest of Honour, and Prof. T.S. Rao was the Chief Guest, along with our Principal Prof. Haritma Chopra and Prof. Vijaya Laxmi Singh (Chairperson, Governing Body, Maitreyi College) There were a total of 118 registered participants, and 46 papers were presented.



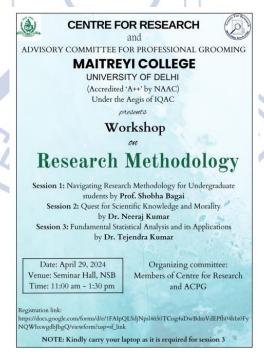
6. Orientation Programme

CFR and ACPG organised an **orientation programme** for the students and faculty members, especially those who had submitted proposals under SIP2023-24, on March 19, 2024 where they were acquainted with the aims and objectives of the Centre, and the various programmes run by the Centre.



7. Research Methodology Workshop

CFR and ACPG also organised a **Research Methodology Workshop** on April 29, 2024. The workshop consisted of three sessions, and the resource persons were Prof. Shobha Bagai (Cluster Innovation Centre, DU), Dr. Neeraj Kumar (Sociology Department, Maitreyi College) and Dr. Tejendra Kumar (Zoology Department).



8. Educational Excursions

CFR, in collaboration with ACPG, organizes educational excursions for students, enhancing their understanding and knowledge through experiential learning, fostering skills like independent learning, creativity, and teamwork, and exposure to diverse cultures and traditions. 11 departments embarked on educational excursions to various destinations in the academic year 2023-24.

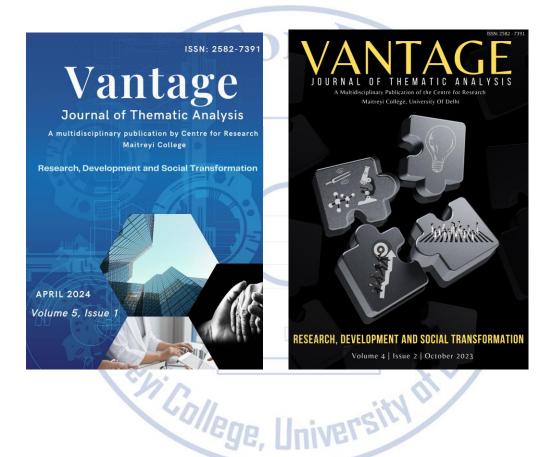
List of Educational trips organized by various departments

S.No.	Department	Date	Destination	No. of students
				visited
1.	History	15-02- 2024	Heritage Walk,	114
		L O I	Safdarjung Tomb	
		00	Complex	
2.	Sociology	09/02/2024 to	Khajuraho (Chhatarpur	39
		14/02/2024	district, Madhya Pradesh)	
3.	पंजाबी /	06-03-2024	Akshardham and Gurdwara	25
			Rakabganj at New Delhi	
4.	Botany	29.02.2024	Yamuna Biodiversity	16
			Park, Jagatpur, Wazirabad	
5.	Botany	14-03-2024	District Park, Hauz Khas,	14
			New Delhi	
6.	Computer Science	07-03- 2024	Lohagarh Farms,	11
			Gurugram, Haryana	
7.	Zoology	16-02-2024 to 18-	Jim Corbett National Park	47
	100	02-2024	and Govind Ballabh Pant	
	19		High Altitude Zoological	
	167	i A	Park, Nainital	
8.	Zoology	06/02/2024	Aravalli Biodiversity Park	30
		VIIBUB III	iversit.	
9.	Zoology	08-02-2024	National Zoological Park,	32
			New Delhi	
10.	Political Science	27-02-2024 to 28-	Red Fort, Biennale	43
		02-2024		
11.	Commerce	08-04-2024 to 09-	Mother Dairy plant in	33
		04-2024	Patparganj	

9. Vantage: Journal of Thematic Analysis (A biannual, multidisciplinary, open access publication of CFR)

Vantage: Journal of Thematic Analysis published two issues in the academic year 2023-24 i.e., the October 2023 (Volume 4, Issue 2) and April 2024 (Volume 5, Issue 1) issues. The theme of both the issues was "Research development and social transformation".

Current Issue (Volume 5 Issue 1, April 2024) of the e-journal can be accessed at: https://journalvantage-maitreyi.com/current.php



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Prof. Haritma Chopra Coordinator, CFR and Offg. Principal