The University of Delhi
The Innovation Projects Report
2013

Innovation Projects Desk
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Office of Dean, Academic Activities and Projects,
University of Delhi, Delhi-110007

The Innovation Projects Report

The Antardhvani cultural festival showcases 113 Innovation Projects funded by the University of Delhi in 2012. The findings are open to peer review and pubic interaction. After the successful progress of the projects, fresh proposals have been invited for the next round. This report presents an overview of the work accomplished by the research teams till February 2013.The listing is alphabetical by the name of the College.

The Concept: The Innovation Projects were conceptualized by the Vice Chancellor against the background of opportunities and limitations reported in undergraduate colleges of the University of Delhi. While teachers often said they wished for research opportunity, the students were often seeking interdisciplinary exposure. Given a curriculum which was bounded by a discipline based syllabus and strict timetables for lectures, the teachers and students did not have the time, or the grants, to consider new ways of learning.

The scheme, 'Innovation Projects in Colleges' invited proposals in January 2012 that were 'designed…to enhance learning experience through student participation'. They were to be conducted by teams of 3 teachers and 10 students from at least 2 departments and to call in a Mentor from outside the institution. The scheme was structured to encourage and support hands-on research by college teachers and students.

Entries & Grants: The response was enthusiastic. The University received 146 entries from 51 colleges, several of them submitting multiple projects to be conducted by interdepartmental teams. The University selected 113 Innovation Projects for giving a grant support of up to Rs. 10 lakhs each, subject to periodic review. The projects were formally launched on 15 May 2012 after a meeting with the Vice Chancellor of over 300 teachers who had signed up with successful proposals. An Innovation Desk was set up for at the office of Dean Academics for regular interaction on issues arising from the implementation of the programme.

Reports and achievements: Quarterly reports were received on 14 August and sent for review to senior faculty. On 12 October 2012 five parallel meetings were held for project groups so that progress could be monitored carefully and experience gained from each other. This meeting was attended by faculty and students and by this time, substantial achievement was noted in some projects. Half yearly reports were submitted around 20 November 2012 and assessed by an expert committee. Several projects had demonstrated the viability of the innovations**.** It is clear that the purpose for which the Innovation Project scheme had been launched, which was to generate excitement in trying out ideas and carrying them through by means of practical output, was being fulfilled. The outcome of the projects may build prototypes for problem-solving in the community. We are glad to report that about 14 projects have received media attention, and 4 are considering patent filing.

Attention in Media: Most projects conducted field trips, seminars and workshops. The hands on approach showed results in public and drew attention to real life problems of shelter, water & air pollution, urban transport, nutrition, preservation of history and culture, weekly markets and such others Newspapers have periodically carried reports and one book has been published.

Committees: Review meetings have been held throughout the year. Thanks are due to Vice Chancellor, Registrar, Finance Officer for administrative measures. For academic assessments, thanks to Prof. S.C. Bhatla, Dean Science, Prof, Ajay Kumar, Prof. Girishwar Misra, Prof. M.M. Chaturvedi as Deans Research, and Dr. Sangit Ragi, Dy. Dean Academics. Ms. Mukta Dutt, Information Executive, has efficiently handled the Innovation Projects Desk.

Prof. Malashri Lal, Dean Academics

Atma Ram Sanatan Dharma College

Project Title: Study the factors responsible for food adulteration, detection of adulteration and biological effects of adulterants on the health of consumer.

Project Code: ARSD-101

Kitchen kit for food adulteration detection

Findings: Our kitchen kit offers a variety of tests which can be performed at home using various household items (utensils, gas burner, etc.) to detect any adulteration present in common food products by simple methods involving the use of common household chemicals such as Tincture Iodine, Washing soda, Toilet cleaner as Hydrochloric acid, Nail paint remover as Acetone, etc.

Faculty: Dr. Sunita Bansal (Chemistry), Dr. Kavita Bhatia (Chemistry), Dr. Anurag Sharma (Biochemistry)

Mentor: Dr. Shikha Dhawan Sethi,
B-54 Ground Floor Shivalik, Malviya Nagar, New Delhi-110017

Phone: 9811378335, Email: shikhadhawan@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Divya Mishra	Chemistry	6	Kanika Gambhir	Phy. Sc.
2	Deeksha Dubey	Chemistry	7	Anubha Chowrasia	Phy. Sc.
3	Ishnani	Chemistry	8	Anshu Kumar	Phy. Sc.
4	Asha Rani	Chemistry	9	Aman Goyal	Phy. Sc.
5	Manish Rawat	Chemistry	10	Karan Joshi	Phy. Sc.

Acharya Narendra Dev College

Project Title: Glucose Detection-a biosensing approach

Project Code: ANDC-101

Students performing experiments for development of low-cost blood glucose detection strips

Findings: The project aims at fabrication of glucose sensor strips as a low-cost solution to high priced commercially available strips. Technology involved includes reaction between glucose oxidase and blood glucose. Based on research the project includes immobilization of enzyme on ZnO matrix (support). Students have optimized protein binding capacity and conditions for adsorption of protein on ZnO matrix. Subsequent steps include investigation of model enzyme (HRP) for interaction with ZnO matrix for implementation related to advancement of low cost strip development. Ongoing efforts also include integration of the laboratory developed strips with the existing low-cost blood sugar read-out machine.

Faculty: Dr. Amit Garg (Electronic), Dr. Arijit Chowdhuri (Physics), Dr. Rajesh Chaudhary (Biomedical Science)

Mentor: Prof. Vinay Gupta, Deptt. of Physics & Astrophysics, University of Delhi
Ph: 9811563101, Email: drguptavinay@gmail.com, vgupta@physics.du.ac.in

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Raj Keshari	Electronics	6	Kapil Joshi	Physics
2	Rajendar	Electronics	7	Vijay Shrivastva	Physics
3	Deepak Kumar	Electronics	8	Dikshant Hans	Physics
4	Durgesh Kumar	Electronics	9	Animesh Kar	Biomedical Science
5	Harsh	Physics	10	Gunjan	Biomedical Science

Acharya Narendra Dev College

Project Title: CO_2 Gas Sensing - an ICT based investigation for pollution control

Project Code: ANDC-102

Students taking measurements in a vacuum chamber

Gas Sensing Test Rig (GSTR)

Findings: The project envisages de-facto measurement of CO_2 concentrations in the immediate environment. Towards this end a custom-built Gas Sensing Test Rig (GSTR) necessary for creation of controlled environment for CO_2 gas sensing has been fabricated and installed. Interfacing of the GSTR with a RS-232C enabled multi-meter and computer has been achieved. CO_2 gas sensing in the GSTR is in advanced stages of implementation. Students have been imparted training on hands-on usage of vacuum based equipment and advanced recipes of substrate cleaning including sequential usage of tri-choloroethylene, acetone, methanol and isopropyl alcohol.

Faculty: Dr. Arijit Chowdhuri (Physics), Dr. Subhash Kumar (Physics), Ms. Sunita Narang (Computer Science)

Mentor: Prof. Vinay Gupta, Deptt. of Physics & Astrophysics, University of Delhi

Ph: 9811563101, Email: drguptavinay@gmail.com, vgupta@physics.du.ac.in

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Hrishabh	Physics	6	Prithvi Singh	Phy. Sci.
2	Priyank	Physics	7	Srijan Sagar	Phy. Sci.
3	Juhi Chandra	Physics	8	Lokesh Kontey	Comp. Sci.
4	Sandal Azhar	Phy. Sci.	9	Amit	Comp. Sci.
5	Priya Kashyap	Phy.Sci.	10	Nilotpal	Comp. Sci.

Acharya Narendra Dev College

Project Title: Mobile phone as a real time sensor based undergraduate laboratory

Project Code: ANDC-103

Students acquiring data on USB 6008 using LabVIEW

Findings: The primary objective of the work was to develop experiments by integrating mobile phones/tablet to various types of sensors and data acquisition cards through LabVIEW. The developed applications in LabVIEW run using web services. These web applications can be downloaded from the internet on different type of mobile devices and afterwards can be used for conducting the sensor based experiments i.e. to convert mobile phone into a mobile laboratory. The students have successfully learnt integration of sensors and data acquisition devices with LabVIEW and automated various experiments in Chemistry. They are currently working on extending these applications to be mobile compatible.

Faculty: Dr. Amit Garg (Electronics), Mr. Vishal Dhingra (Electronics), Dr. Pankaj Khanna (Chemistry),

Mentor: Mr. Karun Jain, Academic Technical Consultant, NI Systems (India) Pvt. Ltd., 311-312, Rectangle-I, D-4, District Centre, Saket, New Delhi-110017.

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Amit Verma	Electronics	6	Sandeep Yadav	Electronics
2	Dhruv Dosad	Electronics	7	Kamal Kishore	Electronics
3	Hemant Adhikari	Electronics	8	Amita	Chemistry
4	Rakhi Bisht	Electronics	9	Rambir	Chemistry
5	Prabhav Pushkar	Electronics	10	Sachin Kumar	Chemistry

Acharya Narendra Dev College

Project Title: Survey-based study to identify the health hazards associated with occupational exposure of textile dyes used by dyers to color the fabrics

Project Code: ANDC-104

Photograph of Dyer using the dye with bare hands. The shopkeeper in the vicinity of dyer is also exposed to harmful dyes. Inset (bottom right) shows the disposal of dye solutions in common drains and on road. Inset (bottom left) shows the hands of a dyer with skin lesions and discolored nails.

Findings: Research findings based on more than 125 interviews of roadside dyers in Delhi and NCR are as follows: Based on the exposure time and dye concentration, the dyers suffer from skin irritation, rashes, scaling and bleeding often on the hands and forearms (in some cases loss of sensation), watering and sore eyes. Some dyers as wells as the shopkeepers in the vicinity of dyer, have reported that they become sensitized straightaway, and some after years of exposure to these reactive dyes. The dyers have informed that these symptoms of sensitization usually get better when they are away from work.

Faculty: Dr. Seema Gupta (Chemistry), Dr. Manisha Jain (Chemistry), Dr. Gagan Dhawan (Bio-Medical Science)

Mentor: Dr. K.C. Gupta , Director Indian Institute of Toxicological Research (CSIR) Lucknow

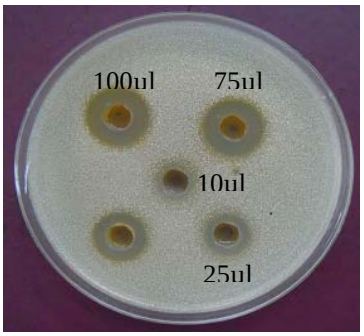
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Hansraj Yadav	Bio. Science	6	Yashaswi Singh	Bio. Science
2	Priya	Bio. Science	7	Jyoti Thakur	Bio. Science
3	Deepika	Bio. Science	8	Keshav Sharma	Chemistry
4	Kuldeep Sharma	Bio. Science	9	Anjali Panwar	Chemistry
5	Zaineb Zaidi	Bio. Science	10	Aayush	Chemistry

Acharya Narendra Dev College

Project Title: Exploring useful bacteria from soil

Project Code:



Secondary screening of methanolic extract of isolate no. 51 against *Candida albicans* to show concentration related zones of inhibition

Bioactive fraction of isolate no 51 methanolic extract against *Candida albicans*

Findings: Bacteria were isolated from diverse ecological habitats. Isolates were screened for antimicrobial activity against pathogenic microorganisms: Staphylococcus aureus, Bacillus cereus, Escherichia coli, Candida albicans and Fusarium oxysporum. Primary screening of strains was performed to select actinomycetes showing substantial antimicrobial activity and representing different ecological habitats. We now have a collection of several strains with antimicrobial activities and these are being subjected to further studies. Bioactive compounds have been extracted from culture broths using methanol and ethyl acetate organic solvents and concentrated to a powdered form. Stock solutions of extracts have been prepared by dissolving in suitable diluents. Activities of extracts have been quantified and compared with known antibiotics. Fractions of extracts have been separated by thin layer chromatography and then subjected to bioautography for identification of actual bioactive fractions. Bioactive compounds will further be characterized on the basis of spectrophotometric and chromatographic techniques.

Faculty: Dr. Monisha Khanna (Zoology), Dr. Ravi Toteja (Zoology), Dr.Vikrant Kumar (Chemistry)

Mentor: Dr. Atul Kumar Johri, Assistant Professor, School of Life Sciences JNU.

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Arpita Varshney	Chemistry	6	Megha Sharma	Phy. Sci.
2	Jyoti Rawat	Zoology	7	Munendra	Zoology
3	Khemchand Upreti	Chemistry	8	Pooja Pant	Zoology
4	Kiran	Zoology	9	Radha	Zoology
5	Manav Gautam	Chemistry	10	Veer Singh	Zoology

Acharya Narendra Dev College

Project Title: Recording and analysis of Locomotory behaviour among birds

Project Code: ANDC-106

Students' team recording bird motor activity at Biodiversity Park, Delhi

Findings: The project aims at analyzing the motor behavior of birds and mapping their taxonomic relationship. For this the motor behavior of various bird species has been video recorded and the available data from other internet database have been compiled. The initial analysis has indicated that the motor profiles of even closely related bird species vary, thus indicating differences in the brain neural network and muscular anatomy among taxonomically distant and closely related birds.

Faculty: Dr. Savithri Singh (Botany), Dr. M. S. Rajeswari (Botany), Dr. Rajesh Chaudhary (Biomedical Science)

Mentor: Dr. G. Nagarjuna, Homi Bhabha Centre For Science and Education TIFR, Mumbai. nagarjun@gnowledge.org

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Ashish Giri	Zoology	6	Madhuri Shakya	Botany
2	Mandeep Kaur	Botany	7	Sumit Varghese	Botany
3	Varun Kumar	Bio. Science	8	Rashmi Komal	Bio. Science
4	Pankaj Pal	Life Science	9	Devyani Marwaha	Bio.Science
5	Sambhavana Chauhan	Botany			

Aditi Mahavidyalaya

Project Title: Bridging the gap from Corporate to Common: building an umbilical cord relationship

Project Code: AM-101

Gender Sensitization/Stress Management Workshops Police Station : Bawana

Findings (4-5 lines): The team has successfully completed a series of 35 lectures/workshops over the last 6 months on topics ranging from Gender Sensitization, Stress Management, Communication Skills, e-Learning & Investment Management in nearby government offices. It was interesting to know that most of the organisations were unaware of these concepts . The Delhi State Industrial & Infrastructural Development Corporation Ltd. (DSIIDC) employees were overwhelmed by the hands-on experience of working on computers in the college computer lab. The level of stress in the mothers at SOS village, Bawana left the resource person surprised. A number of techniques to deal with stress are being offered. A series of workshops on Gender Sensitization for the Delhi Police at Bawana and Ashok Vihar are scheduled in February, 2013.

Faculty: Dr. Pooja Khanna (English), Dr. Rajiv Kaur (Commerce), Dr. Anu Jain (Commerce), Dr. Hema Gupta (Commerce)

Mentor: Prof .Y P Singh, Former Professor, Head and Dean, Faculty of Commerce & Business University of Delhi (Presently visiting Professor Jamia Milia Islamia University)

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Archana	B.Com (P)	6	Karuna	B.Com Hon.
2	Sujata	B.Com (P)	7	Barkha	B.Com Hon.
3	Neha	B.Com Hon.	8	Komal	B.Com Hon.
4	Nidhi	B.Com Hon.	9	Neera	B.Com (P)
5	Sakshi	B.Com Hon.			

Aditi Mahavidyalaya

Project Title: Locating women in the context of Partition: An account of lived experiences and unheard voices

Project Code: AM-102

Findings (4-5 lines): Initial findings revealed that the cause of Partition was primarily seen to be due to communal disharmony between Hindus and Muslims. People of other religions were neither affected nor displaced. Women irrespective of religion, class, age and status suffered physical and emotional violence. The nature and the magnitude of violence differed among the persons met. The study gives glimpses of the instances of happiness, bewilderrment, pain and trauma of these women survivors and their sense of 'belongingness' with the Pakistan they keft behind. They wish to visit the 'place of origin' once again if given an opportunity.

Faculty: Dr. Neena Pandey (Social Work), Dr.Neenu Kumar (English), Ms. Punita

Mentor: Dr. (Mrs.) Gouri Srivastava, Professor and Head Department of Women's Studies, NCERT, Sri Aurobindo Marg, New Delhi – 110 016 (M): 9811150115 (O): 011-26962590 Email: gourisrivastava_7@reddiffmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Aruna Yadav	B.El.Ed	6	Anuradha	Social Work
2	Arushi Kapoor	B.El.Ed	7	Monika	Social Work
3	Pooja Khatri	B.El.Ed	8	Pooja	Social Work
4	Sonam Grover	B.El.Ed	9	Ruchika Rana	B.El.Ed
5	Anupam	Social Work	10	Smirti Chandok	B.El.Ed

Bhaskaracharya College of Applied Sciences

Project Title: Study of Rise in Consumption of the Mobile phones/Electronic Gadgets in Delhi region and Material Analysis projecting potential Electronic waste and their impact on environment

Project Code: BCAS-101

Fastest growing contributor to municipal waste globally-E WASTE

Findings (4-5 lines): According to the Ministry of Environment and Forest, Government of India, E waste is expected to increase to 8 lakh tonnes by 2012. Survey to collect data based on sample statistics of non-probability; convenience samples using random sampling was adopted to study various patterns like a) Awareness of Environmental hazards due to e-waste in various age groups; b) Usage of mobile phone in various age groups among men and men; c) frequency of change in cell phones in various age groups; d) attitude towards recycling of unused electronic products. Identified some of the recoverable metals using AAS method.

Faculty: Dr. Geeta Bhatt (Instrumentation), Dr. Manoj Khanna (Electronics), Dr. Balaram Pani (Chemistry)

Mentor: Dr. Ashish Chaturvedi, Senior Technical Advisor (AESM),
Email: ashish.chaturvedi@giz.de

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Visvesh	B.sc (Hons) Instrumentation	6	Shivani Gupta	B.sc (Hons) Instrumentation
2	Sarthak	B.sc (Hons) Instrumentation	7	Abhinav Abhishek	B.sc (Hons) Instrumentation
3	Sunil kumar Morya	B.sc (Hons) Instrumentation	8	Surabhi Nayak	B.sc (Hons) Electronics
4	Jevatdeep Singh	B.sc (Hons) Instrumentation	9	Paras Sharma	B.sc (Hons) Electronics
5	Naveen K Giri	B.sc (Hons) Instrumentation	10	Himangi	B.sc (Hons) Electronics

Bhaskaracharya College of Applied Sciences

Project Title: Studies to assess the quality of fruits and vegetables with respect to microbial load and the remedial measures for their control

Project Code: BCAS-102

We are what we eat

Findings (4-5 lines): In the changing scenario of food safety a lot needs to be achieved in India. There is no such data available so far and therefore, this project has probably helped to generate information which can be useful for the scientific community and we hope **the finding of our cost-effective "Fruit-N-Vegi Wash"** can be used as a tool to reduce the microbial population at the consumer level. In the present study food safety practices in various retail outlets located in West Delhi, India were analyzed. A total of 100 different retail outlets were surveyed by the students. The findings of the study revealed that the attitudes and practices need more attention at the implementation level. Our students have been able to successfully study the various gap areas which can act as threats to food safety. The outcome of our study could serve as a reference guide for various stakeholders i.e. regulators, policy makers, consumers etc., once published. This would be a targeted document for drawing plans and strategies to achieve the desired standards of food safety in the country, using the results of this study as a model for major metro cities. Moreover, we are also in the process of providing the very best value in science-based products for food diagnostics that are fast, cost-effective, reliable and convenient to use even at the Retail level.

Faculty: Dr. Shalini Sehgal (Food Technology), Dr.Purnima Anand (Microbiology), Dr. Uma Chaudhry (Biomedical Science)

Mentor: Dr. R.K. Khandal, Vice Chancellor, Gautam Budh Technical University
Email: vc@uptu.ac.in, Phone: 91+522+2732194 (Lucknow)

Students:

S. No.	Name	Department	S. No.	Name	Department
1	Saurabh Bhardawaj	Food Tech.	6	Manjusha N	Microbiology
2	Surbhi Wason	Food Tech.	7	Janani S V	Microbiology
3	Tuba Usmani	Food Tech.	8	Anoushka Khanna	Bio. Science
4	Anshika Bhardawaj	Food Tech.	9	Arpan Pandey	Bio. Science
5	Jaskaran Kaur	Microbiology	10	Preeti Jindal	Bio. Science

Bhaskaracharya College of Applied Sciences

Project Title: Development of Cost-Effective Nutritious Multi Cereal Bar and its Sustainable Packaging Using Nano-Biopolymer

Project Code: BCAS-103

Nutrition Bar and Its Packaging Material

Findings (4-5 lines): The Nutrition bar developed to curb malnutrition in India has been tested and found to be rich in all major nutrients and most of the minor nutrients. It has an adequate amount of Vitamins and minerals and a long shelf life. As it has been prepared from indigenous ingredients, the cost of the bar is very cheap.A low cost Bio-film suitable for food packaging has been developed for the packaging of the Nutrition bar. The film is water insoluble, heat resistant, heat sealable and has excellent printability. It is expected to be biodegradable and have anti- microbial properties.

Faculty: Dr. Meenakshi Garg (Food Technology), Dr.Sushmita Dey Sadhu (Polymer Science), Dr. Shivani G Virmani (Biomedical Science)

Mentor: Prof. A.K. Ghosh, Centre of Polymer Engineering & Technology,IIT Delhi. Email: anupkghosh@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Shivangi Jain	Bio. Science	6	Harsh Chauhan	Food Tech.
2	Annesha Dutta	Bio. Science	7	Syed Umais	Food Tech.
3	Hemant Joshi	Bio. Science	8	Ankit Garg	Polymer Science
4	Nitesh Sahu	Food Tech.	9	Rishabh Handa	Polymer Science
5	Tripti Negi	Food Tech.	10	Anshuman Soni	Polymer Science

Bhaskaracharya College of Applied Sciences

Project Title: Development and study of alternate packaging materials from agro wastes and its application in food packaging

Project Code: BCAS-104



Packaging films of various shapes developed using agro waste

Findings (4-5 lines): The agro based waste materials are used to design eco-friendly packaging material. This would reduce the dependency on non-renewable and non-biodegradable products. We have developed hard films of different shapes. These were then standardized and also characterized. The properties like swelling, porosity, permeability, mechanical strength were studied. Also the pH responsive behaviour was analyzed. We will now test their suitability for packaging. We are also in the process of developing flexible packaging films.

Faculty: Dr. S K Shukla (Polymer Science), Dr.Anand Bharadvaja (Physics), Dr. Rizwana (Food Technology)

Mentor: Dr. G.C Dubey, Scientist - G (Retired), Solid State Physical Laboratory, Delhi. Email: gcdubey@hotmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Sudha	Polymer Science	6	Manish Rawat	Food Tech.
2	Pooja Sharma	Polymer Science	7	Silvi Garg	Food Tech.
3	Priyanka	Polymer Science	8	Vandana	Food Tech.
4	Nidhi	Polymer Science	9	Charu Garg	Physics
5	Akshay Bhalla	Food Tech.	10	Namrata Pant	Physics

Bhaskaracharya College of Applied Sciences

Project Title: Determine the Speciation of some Selected Heavy Metals from E-wastes and their Impact on Ground Water

Project Code: BCAS-105

Students Working in the Laboratory

Findings (4-5 lines): The analysis of the preserved water samples from various industrial e-waste sites that is Mundka, Mayapuri, Kumurti Nagar, Geeta Coloney etc have been performed in the laboratory. Students were involved in all these activities of collection and experimentation. The following experiments have been performed till now by using different technique: Determination of the chlorine concentration by Iodometric titrimetric method, determination of the Alkalinity by volumetric titration, determination of the pH using pH meter, determination of the electrolytic conduction by conductance meter determination of Dissolved Oxygen: by Winkler method. The results of the above experiments show that the water in these areas are contaminated and not fit for drinking.

Faculty: Dr. Ramesh Kataria (Chemistry), Dr.Manoj K Tiwari (Electronics), Dr. Parthsarthy Pal (Physics)

Mentor: Prof.Avinashi Kapoor, Deptt. of Electronic Science, University of Delhi.
Email: avinashi_kapoor@yahoo.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Aman Vashisth	Electronics	6	Reetu Yadav	Polymer Science
2	Yashu Varshney	Electronics	7	Hari Kishan	Polymer Science
3	Sunny Saini	Electronics	8	Ankita Singh	Polymer Science
4	Pawan Gautam	Electronics	9	Shiksha Bakshi	Polymer Science
5	Surya Tanwar	Polymer Science			

Bhim Rao Ambedkar College

Project Title: Growing Under the Shadow of Mass Media: Explorations into Family Lives and Psycho-Social Well-Being

Project Code: BRAC-101

Students at NAOP Conference.

Dr. Navin Kumar, Dr. Niraj Tyagi(Dy. Dean) awarded certificate of participation in Academic Congress.

Findings (4-5 lines): Following findings have emerged in course of this research initiative

- Mass Media has occupied a major share in the lives of the people. It has become an all important site for projecting and consuming desires as well as dreaming a world which at times is an illusion that interferes with the real world.
- Media has also emerged as a powerful source of knowledge, information, skill building, and cultural sensibility.There is a generational shift in the consumption pattern of Media messages in which younger generation is habituated to it and organizes its life through the inputs from Media. The study tends to suggest that as the fourth pillar of democracy Media needs to share the burden of social responsibility on issues such as Corruption, Gender Equity, Marginalily, Education and Awareness of Rural India.

Faculty: Dr. Navin Kumar (Applied Psychology), Dr.Indiwar Mishra (Applied Psychology), Dr. Bishnu Mohan Dash (Social Work)

Mentor: Prof. N.K. Chadha, Deptt. of Psychology, University of Delhi.

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Charvi Sharma	Applied Psy.	6	Kanchan Bhardawaj	Applied Psy.
2	Prashansha Sharma	Applied Psy.	7	Mayank Dubey	Applied Psy.
3	Ajay Kumar	Applied Psy.	8	Nikita Jain	Applied Psy.
4	Durgesh Ojha	Applied Psy.	9	Sanchita Johri	Applied Psy.
5	Sonali Ranjan	Applied Psy.	10	Megha Taragi	Applied Psy

Bharati College for Women

Project Title: Challenges and Opportunities for School Girls in Delhi and Rajasthan: Gender Discrimination, Sexual Harassment, Wash (Water, Sanitation and Hygiene) and its Impact on Language, Communication Skill and Socio-Culture Behavioral Patterns.

Project Code: BW-101

Findings (4-5 lines): The field survey of Delhi and Rajasthan clearly shows that the society is either unaware or insensitive about the problems faced by girls and as a result the social friction continuously evolves in the framework of schools and it isolates, harasses, discriminates, abuses, and demoralizes fellow girl students. This leads to further gender discrimination and sexual harassment. Girl students face lack of water, sanitation and hygiene facilities in the schools. Gender discrimination, sexual harassment, if not addressed in time, leads to problems in communication skill and socio-culture behavior of girls.

Faculty: Dr. Anju Gurawa (English), Dr. Rakhi Jain (English), Dr. Prem Kumari Singh (Hindi)

Mentor: Dr. Rekha Sexena, Deptt. of Political Science, University of Delhi.
Email: rekhasaxenadu@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	M Vaishnavi	Commerce	6	Bhavana	Hindi Hon
2	Manjula Kaushik	Commerce	7	Radhika	B. A. Prog
3	Sunita	B. A. Prog	8	Nehal Bhardwaj	Commmerce
4	Nisha	Hindi Hon	9	Nikita Shrivastav	Commerce
5	Shweta	B. A. Prog	10	Anjali	Commerce

College of Vocational Studies

Project Title: Impact of Socio-Economic-Cultural Profile of Students on Academic Performance

Project Code: CVS-101

Team, Innovation Project, College of Vocational Studies

Findings: Our project is an empirical study that examines the link between the socio-economic-cultural profile and academic performance of students in the College of Vocational Studies. Statistical tests / analysis on the entire population of the college reveal that-

- Attendance has a significant positive correlation with academic performance varying from 0.5 to 0.8 for different courses.
- Socially and economically weaker groups have lower attendance rates, higher drop-out rates and relatively poor academic performance.
- English language proficiency explains roughly 30% variation in overall academic performance.

Faculty: Dr. Gauri Mishra (English), Dr. Meera Nangia (Commerce), Dr. Vijaya Rajni (Economics)

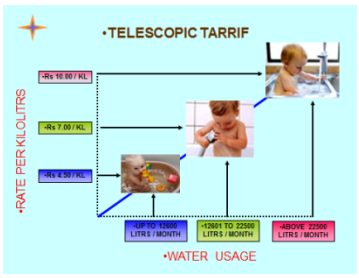
Mentor: Prof. Binod Khadria, Professor of Economics & Education, and Chairperson, Zakir Husain Centre for Educational Studies, JNU.
Email: (bkhadria@gmail.com, bkhadria@mail.jnu.ac.in) Ph: 9810784513

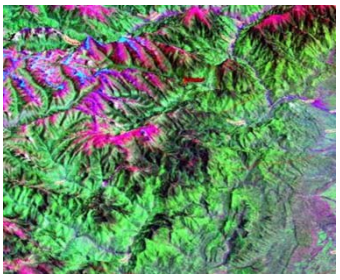
S.No.	Name	Department	S.No.	Name	Department
1	Aanchal Gupta	Eco. (H)	6	Roopal Shard	Eco. (H)
2	Aishwarya	Eco.(H)	7	Sukarm Saluja	B.A(Voc.)
3	Ayushi Pahuja	Eco.(H)	8	Savera Gujral	B.B.E
4	Gajendra Thakur	B.A(Voc.)	9	Utsav Khandelwal	B.Sc (H)
5	Monica Saxena	Eco.(H)	10	Vishal Khatri	B.Sc (H)

Cluster Innovation Centre

Project Title: 24x7 water supply in villages and small towns of India

Project Code: CIC-101





Telescopic Tariff Structure	Satellite Imagery of Malkapur	GPS Field Survey of Malkapur

The project aims to develop an open source GIS based IT module that can create automatic project proposal for 24x7 water supply system implementation.

Findings (4-5 lines):

- Preliminary GIS based water distribution network based upon automated terrain extraction algorithm using Shuttle Radar Topographic Mission data of Malkapur.
- The study of tariff slab of Malkapur 24X7 water supply system resulted in conclusion that cross subsidy could be one mechanism to have optimal tariff slab structure.
- Major considerations of civil engineering infrastructure were studied and used to construct the database for supplementing the project report software framework.

Faculty: Dr. B.Biswal (Physics), Dr. Sanjeev Singh (Electronics & Computer Science), Dr. Shobha Bagai (Mathematics), Mr. Abhijit Parmar, Ms. Rachna Sharma

Mentor: Dr. Aparna Mehra, Indian Institute of Technology, Delhi.
Ph: 011-26597106. Email: apmehra@maths.iitd.ac.in

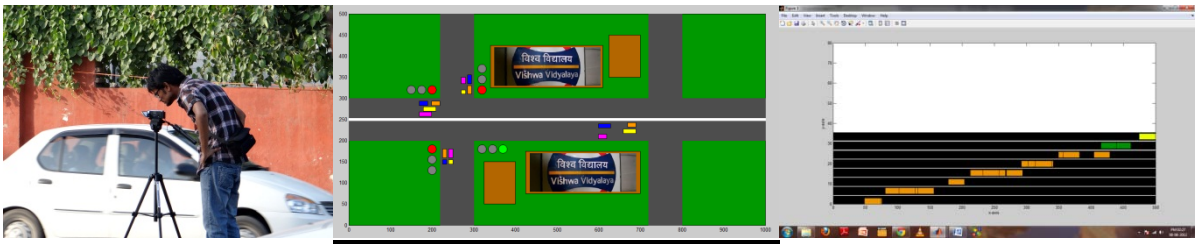
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Akshay Kheral	CIC	6	Mayank Arora	CIC
2	Akshee Jain	CIC	7	Nikita Garg	CIC
3	Aman Thakur	CIC	8	Santoshi	CIC
4	Chandrani Kumari	CIC	9	Shreya	CIC
5	Latisha Khattar	CIC	10	Vikas	CIC

Cluster Innovation Centre

Project Title: Solution for road management from modeling and simulation of traffic flow on selected roads of Delhi

Project Code: CIC-102



Recording of synchronous traffic for modeling data. Simulation on straight roads and at intersections. The project aims to reproduce the basic rules governing the heterogeneous traffic flow on selected Delhi roads through computer simulation of traffic on these segments. Model parameters are assessed from recording.

Findings (4-5 lines):

- **Synchronous recording of vehicular traffic on selected roads:** Recording of traffic on a road segment near University of Delhi provides distribution of vehicles, density, types.
- **Model parameter estimation and simulation:** Flux of each type of incoming and outgoing vehicles on the frame, speed and overtaking pattern.
- **Fitting of data with recordings:** Preliminary simulation to match the recording with model. Simulations using MATLAB and Java
- **Statistical analysis:** Statistical analysis of recorded data, matching with longer model simulation.

Faculty: Dr. B.Biswal (Physics), Dr. Sanjeev Singh (Electronics & Computer Science), Dr. Shobha Bagai (Mathematics)

Mentor: Dr. Varsha Banerjee, Associate Professor in IIT, Delhi.
Ph.011-26591335, Email: varsha@physics.iitd.ac.in

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Vivek Pal	CIC	6	Punit Kumar	CIC
2	Himani Swarup	CIC	7	Sandeep Kumar	CIC
3	Sumit Yadav	CIC	8	Rahul Yadav	CIC
4	O.P. Yadav	CIC	9	Sangeeta	CIC
5	S Pavitra	CIC	10	Manju Kr. Meena	CIC

Cluster Innovation Centre

Project Title: IT model for parking space management: optimal and efficient parking-retrieval of vehicles

Project Code: CIC-103

Field survey and protyping for image analysis and simulation.

Findings (4-5 lines):

- The team visited a few residential colonies only to conclude that number of vehicles in these localities is not in proportion to the available space (the parking space available is way too little!). It is, therefore, not possible to solve such problems by just optimizing parking behaviour and monitoring the vehicles.

- In case of University Parking, the space seems to be sufficient for the average number of users so far; users still tend to face certain problems. Parking the cars randomly causes problem for retrieval of the cars. Unorganized parking can be easily worked upon and an android application related to the same is in its last stage of completion.

Faculty: Dr. B.Biswal (Physics), Dr. Pankaj Tyagi (Physics), Dr. Shobha Bagai (Mathematics)

Mentor: Prof. Geetha Venkatraman, Ambedkar University, Delhi. Professor in Mathematics Research Area- Algebra
Ph: 9350916857 Email: geetha@aud.ac.in

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Sahil Mathur	CIC	6	Parul Madan	CIC
2	Shreya Juneja	CIC	7	Sandeep Narwal	CIC
3	Vasundhara	CIC	8	Akshat Bhattacharjee	CIC
4	Aditi Chawla	CIC	9	Madhulika Mukherjee	CIC
5	Tarun Khajuria	CIC			.

Deshbandhu College

Project Title: Effect of plant extracts on the midgut microbial flora of *Aedes aegypti*

Project Code: DB-101

Mosquito room at Deshbandhu College

Findings (4-5 lines): The research work carried out in the present innovation project is aimed at developing a novel strategy to reduce incidence of dengue fever by management of its vector *Aedes aegypti*. The midgut of *Aedes* is inhabited by microbial flora which influence host biology and its capacity to transmit disease pathogen *i.e*. dengue virus. We isolated, separated and purified 12 microbes from the midgut of *Aedes*, based on their morphological and microscopic characteristics. Crude extracts of 4 Indian traditional plants such as Tulsi *Ocimum sanctum*, Neem *Azadirachta indica*, *Aloe vera*, and Turmeric *Curcuma longa*, and an obnoxious weed *Lantana camara* were screened against *Aedes* and its gut microbiota. Our research findings indicated that the crude extracts of the plants screened possessed insecticidal and antimicrobial activities.

Faculty: Dr. Kamal Kumar Gupta (Zoology), Dr. Varsha Baweja (Zoology), Dr. Meenakshi Prajneshu (Botany)

Mentor: Dr. R.D. Gautam, Entomology Division, I.A.R.I.
Email: profgautam@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Manish Kr. Mishra	Zoology	6	Jyotsana Pandey	Life Science
2	Naresh Singh	Zoology	7	Manish Sharma	Botany
3	Mohit Aggarwal	Zoology	8	Pratibha Upadhayaya	Botany
4	Vinay Dubey	Zoology	9	Deepti Singh	Bio-Chem
5	Chetkar Chandra Keshwam	Zoology	10	Rashmi Priya	Bio-Chem

Deshbandhu College

Project Title: Qualitative analysis of water and gaseous pollutants from different zones of NCR region and designing some tools and techniques to eradicate them by using absorption and adsorption techniques involving biodegradable materials

Project Code: DB-102

Students performing chemical tests in Chemistry Research Lab at Deshbandhu College

Findings (4-5 lines): 1.Deshbandhu College 2. Noida 3.Dwarka 4.Ghaziabad 5. Peeragarhi 6.Sonipat 7.Maharani Bagh 8.Nangloi 9.Gurgoan 10. Faridabad 11.Palwal 12.Saraswati Vihar 13.Yamuna water 14.Kundli.

These were tested for pH, TDS, turbidity, alkalinity, hardness, conductivity and detection of ions was also done.

The treatment of industrial waste water by waste biomass is underway using almond peel to treat pollutants containing toxic metals (eg. Lead, Chromium, Copper etc.) with the help of spectrophotometer.

Faculty: Dr. Vivek Saxsena (Chemistry), Dr.Sushila Singhal (Chemistry), Ms. Manju Rani (Physic)

Mentor: Dr. Maneesha Panday Department of Chemistry, IGNOU Delhi-68
Email: maneesha@ignou.ac.in

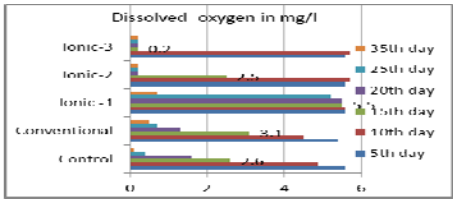
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Ankit Kumar	B.Sc. (P)I.C.	6	Shivam	B.Sc. (P)I.C.
2	Babita	B.Sc. (P)I.C.	7	Taranjeet Sikka	B.Sc. (P)I.C.
3	Bharat Kr. Tiwary	B.Sc. (H.)Phy.Sci	8	Vijay Kumar	B.Sc. (P)I.C.
4	Rohit Kr. Jha	B.Sc. (P)I.C.	9	Ronak Singh	B.Sc. (P)I.C.
5	Shivam Chawla	B.Sc. (P)I.C.	10	Vikas	B.Sc. (P)I.C.

Dayal Singh College

Project Title: Synthesis and Characterization of Ionic Liquids for their use in Chromatographic Separation of Amino Acids and Sugars.

Project Code: DS-101



Effect of designed solvent systems on plant growth and water

Findings (4-5 lines)**:** Our studies have resulted in the development of a solvent system for carrying out the separation of amino acids & sugars by paper chromatography & TLC. Different ionic liquids were selected for the study: 2-hydroxyethyl trimethyl ammonium lactate; 1-ethyl-3-imidazolium lactate and 1-ethyl-3-imidazolium dibutyl phosphate; in combination with the conventional system of Butanol: Acetic acid: Water. It has been possible to replace 25-30% of the conventional solvents Butanol & Acetic acid in this system. The designed solvent systems have been characterized by conductivity measurements, pH, and potential difference. To understand the interaction between the solute & the solvent UV studies have also been carried out. To study the environmental effect of these solvents, effect on the plant growth and dissolved oxygen of the water systems with time has been carried out that resulted in the better plant growth in case of ionic liquids. Even the level of dissolved oxygen was maintained for a period of one month in case of ionic liquids, however for conventional systems the level of oxygen decreased in a period of less than 15 days. The project is strengthening an inter-disciplinary research, creation of research facilities that can be used by a large number of students, the scientific ideas that connect the traditional and practical knowledge as well as the conservation of environment by reducing pollution through introducing green solvents thus benefitting the community in local as well as global context.

Faculty: Dr Aruna Chhikara (Chemistry), Dr.Amita Malik (Chemistry), Dr. Ranjana Saxena (Zoology)

Mentor: Dr. Madhu Chopra, ACBR, University of Delhi
Ph: 9810488199, Email: mchopradu@gmail.com,

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Shatakshi	Chemistry	6	Anjali Bangar	Chemistry
2	Enakshi Sharma	Chemistry	7	Prakash	Zoology
3	Nasim Akhtar	Chemistry	8	Manish Vats	Zoology
4	Shalu Aggarwal	Chemistry	9	Kirtipriya	Life Sci.
5	Prabhakar	Chemistry	10	Pinky Atwal	Life Sci.

Dayal Singh College

Project Title: Understanding the mechanism of action of Prime Ayurvedic Plant drugs by undertaking a first principal quantum mechanical study of the structure-property relationship and activity of the various chemical ingredients of these plants and undertaking In-Campus-Plantation aimed at understanding entrepreneurial activities in this area

Project Code: DS-102

Student Kajal Nain during Poster Presentation Session in the conference ETDDD 2013, DU

Findings (4-5 lines): As envisaged in the project proposal, the focus of the project team is on the understanding of antioxidant properties of various chemical ingredients of *Prime Ayurvedic Plants*. The structure and the energetics of *Quercetin*, an important *flavonoid* class of compounds, have been investigated in both neutral and charged states using *first principal's* quantum mechanical methods. The investigations show that *Quercetin* is a better antioxidant in comparison to both Vitamin A and Vitamin C. The *3-OH* group in the Quercetin has been found to be the most important site for the antioxidant behavior of the molecule.

Faculty: Dr. Amit Kumar (Chemistry), Dr.P. Chitralekha (Botany),Mr. Keshav (Chemistry)

Mentor: Dr. Shyam Kishore, Associate Professor in Department of Chemistry, J.V. College Baraut, Uttar Pradesh.
Ph: 8010636233, Email: shyam387@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Kajal Nanin	Chemistry	6	Athira	Chemistry
2	Monika Bhardwaj	Chemistry	7	Narendar Singh Negi	Chemistry
3	Rahul Samrat	Chemistry	8	Silky Garg	Chemistry
4	Bablu Kumar	Chemistry	9	Urvashi Singh	Chemistry
5	Kavya Jindal	Chemistry	10	Pankaj Saini	Chemistry

Dayal Singh College

Project Title: Chemistry Learning: Eco-Friendly and Inquiry-model based experimental chemistry with inherent safety aspects

Project Code: DS-103

Students performing experiments

Findings (4-5 lines): A survey on yearly consumption of toxic chemicals that are drained out in water bodies without treatment by various colleges of Delhi University has been carried out. In view of this some existing experiments have been modified to reduce chemical consumption and some new innovative and eco-friendly experiments have been designedwhich can be considered for inclusion in the curriculum of Delhi University.

Faculty: Dr. A K Bhagi (Chemistry), Dr. Navneet Manav (Chemistry), Dr. Amit Kumar (Chemistry), Dr.Vinod K Paliwal (Physics),

Mentor: Dr. Rajeev Gupta, Deptt. of Chemistry, University of Delhi.
Mob: 9810001819, Email: rgupta@chemistry.du.ac.in

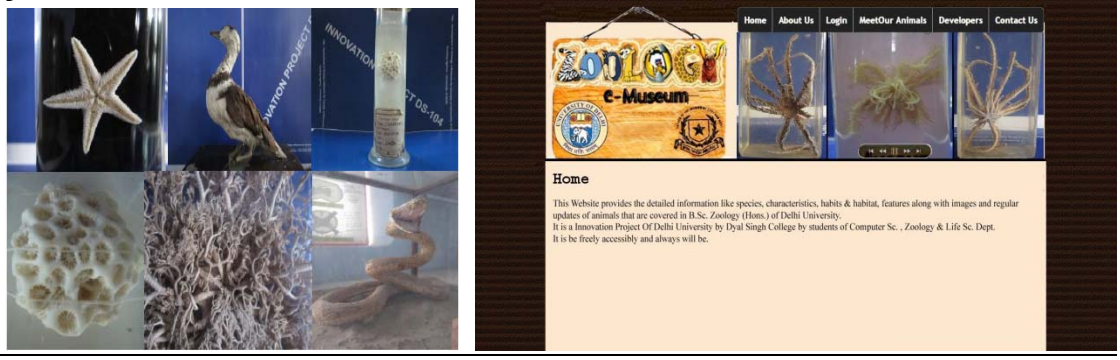
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Swati Kanduja	Chemistry	6	Priyanka Dyoundi	Chemistry
2	Surbhi Arora	Chemistry	7	Manisha Aggarwal	Chemistry
3	Yashpal Singh	Chemistry	8	Pratibha Negi	Chemistry
4	Deepak Pal	Chemistry	9	Pankaj Pal	Chemistry
5	S Meenakshi	Chemistry			

Dayal Singh College

Project Title: Development of Zoology E-Museum for courses of University of Delhi

Project Code: DS-104



(i) Museum specimen for e-museum and (ii) snapshot of *e-museum* website

Findings (4-5 lines) : The existing animal museum in colleges are facing certain limitations – deterioration of preserved animals, non-availability of all specimens in every college, constraint of all-time accessibility, and guidelines issued by Ministry of Environment and Forest. ***E-museum*** is being developed to overcome above limitations and to benefit larger group. It will provide information and research updates on specimens. E-museum may allow visitors to have username and password and even add to the collection; may be accessed via social media; may be accessible to the visually impaired. It will emerge as a valuable research tool among the users for understanding Animal Biodiversity.

Faculty: Dr. V P Aggarwal (Zoology), Dr. Anita Goel (Computer Science), Dr. P V Arya (Zoology), Dr. Sanjiv Mullick (Zoology)

Mentor: Dr. B. P. Saxena, Ex. Reader, Deptt. Of Zoology, Deshbandhu College Kalkaji, Delhi-19. Ph: 9818654209

Students:

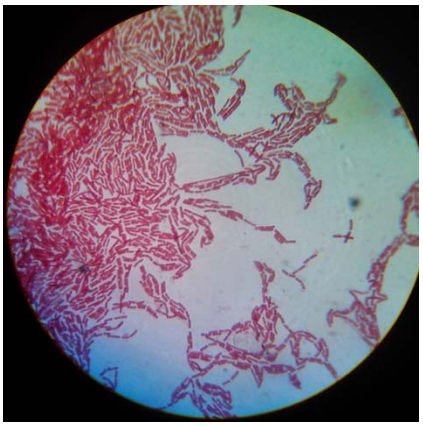
S.No.	Name	Department	S.No.	Name	Department
1	Prashant Gupta	Computer Science	6	Dolly Kumari	Zoology
2	Ekansh Vishnoi	Computer Science	7	Reenita Tokas	Zoology
3	Palak Pandah	Computer Science	8	Vikram Kr. Tiwari	Life Science
4	Rajan Chabbra	Computer Science	9	Aditi Kumari	Life Science
5	Neha Siddiqui	Zoology	10	Shubham Jain	Life Science

Daulat Ram College

Project Title: Metal Scavengers based on Functionalized Silica Gels and Microorganisms: Greener and Sustainable Approach for Treatment of Soil and Water

Project Code: DR-101

Alizarin Red S functionalized silica gel (ARS-SG)



Biological species isolated from tannery effluent: Rod shaped, large strain

Findings (4-5 lines): ARS-SG holds good potential for the preconcentration of Cr (III) from aqueous solutions. Since no carcinogenic or chlorinated organic solvents are employed as in solvent extraction, the present method is ecofriendly and greener in nature. Also, the isolated bacteria would help in cleaning chromium contaminated areas.

Faculty: Dr. K Nirmala (Bio-Chemistry), Dr.Priti Malhotra (Chemistry), Dr.Shuchi Dhingra (Chemistry)

Mentor: Prof. R.K. Sharma, Deptt. of Chemistry, Block B, Room Number 105, First Floor, University of Delhi.
Ph. 9958313101, 01127666250 (Office), Email: rksharmagreenchem@hotmail.com, rksharmagreenchem@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Pooja	Bio-Chemistry	6	Keerti Attri	Chemistry
2	Sonia	Bio-Chemistry	7	Akansha Sood	Chemistry
3	Shainan Hora	Bio-Chemistry	8	Bindu	Chemistry
4	Rachita Trikha	Life Science	9	Sonal priya	Chemistry
5	Neha Thakur	Chemistry	10	Sohini Banarjee	Chemistry

Delhi College of Arts & Commerce

Project Title: A Study of Stress Levels and Stress Sources among Undergraduate Students of University of Delhi

Project Code: DCAC-101

Mentor, teachers and students deliberating on the Project

Findings (4-5 lines): Questionnaire Survey based initial findings reveal that with each subsequent year of undergraduate study, academic stress experienced by students increases - final year students experience the maximum stress of 2.94 on a scale of 5, while first year students score 2.66 on a scale of 5. Interestingly, while academic stress increases with each year of study, students' ability to cope with stress decreases - first year students score 2.85 on a scale of 5 with respect to coping with stress, while final year students score 2.66 on a scale of 5. The good news the findings reveal is that 80 percent of the students do not use tobacco or alcohol to reduce stress and that more than 72 percent listen to music to reduce stress.

Faculty: Dr. Anita Bhela (English), Dr.V B Singh (Computer Science), Dr.Mukesh Bagoria (Political Science)

Mentor: Prof. N. K. Chadha, Head, Department of Psychology, University of Delhi
Ph: 9811134351, Email: nkcdu11@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Aman Kaul	English	6	Prakriti Kargeti	Journalism
2	Rajshree Bamel	English	7	Suvashish Sharma	English
3	Nishesh Bhasin	Economics	8	Yogini Jhingan	Pol. Science
4	Aditi	Pol. Science	9	Anjali Shrivastava	English
5	Arushi Khandelwal	Pol. Science	10	Akash Jindal	English

Delhi College of Arts & Commerce

Project Title: Symphonies of Life in Nature and Environment: Folksongs of Punjab and Jammu and Kashmir

Project Code: DCAC-102

Shared experiences of rural Kashmiri community

Findings (4-5 lines): The project explores the 'lived experience' of communities as reflected in the folk-songs of Punjab and Jammu and Kashmir through oral testimonies, written records, interactive sessions and workshops. The team discovered that the original folksongs are getting diluted due to urbanization and it is only the older generation who still remembers them as connected with their socio-cultural identity. The team successfully recorded a number of songs sung by the grassroots people, ranging from 10 years to 85 years in age and felt the need for these songs to be retrieved and preserved as a repository of their culture and memories. The innovative group aims at studying the motifs of Nature and Environment in its flora and fauna, the rhythmic flow of rivers and the phenomenal change of seasons, as contextualized in the themes of the songs and beautifully enshrined in the movement of eternal life cycle of human beings.

Faculty: Dr. Devika Narula (English), Dr. Amrit Kaur Basra (History), Dr.Vinita Gupta Chaturvedi (English)

Mentor: Dr. Chandra Mohan, Advisor, International Higher Education, Central University of Gujarat. Email: c.mohan.7@hotmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Kunal Mishra	English	6	Arpit Aggarwal	English
2	Ankita Srivastava	English	7	Parul Verma	English
3	Priyanka Daing	English	8	Anagha	History
4	Sakshi Chaudhary	English	9	Aaqib Majeeb	History
5	Kavi Yadav	English	10	Chand Kubba	History

Deen Dayal Upadhyaya College

Project Title: Studies on Water Pollution of River Yamuna in Delhi

Project Code: DDU-101

Findings (4-5 lines): Samples of water of river Yamuna were collected from four different locations i.e., Wazirabad bridge, Geeta colony Bridge, Nizamuddin Bridge and Okhla Barrage to study the variations in physiochemical parameters i.e., carbonate, bicarbonate, total hardness, nitrate, sulphate, phosphate, chloride, fluoride, silica, DO, BOD, COD, conductivity, pH, temperature and heavy metals and faecal coliforms. These parameters have a gradual increase from Wazirabad Bridge to Okhla Barrage indicating the increasing pollution level due to human activities on the river bed and falling of various drains in the river Yamuna.

Faculty: Dr. Vinod Kumar (Chemistry), Dr. Mahaveer (Chemistry), Dr.Rajkumari Sanayaima (Botany)

Mentor: Dr. Dinesh Mohan, Associate Professor in School of Environmental Sciences
Jawaharlal Nehru University, New Delhi-110067
Ph. 9717196214, Email: dm_1967@hotmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Shivam Sharma	Botany	6	Laxmi Narayan	Chemistry
2	Anjali Dahiya	Botany	7	Praveen Kr. Budakoti	Chemistry
3	Himanshi Yaduvanshi	LFS	8	Prashant Jain	Chemistry
4	Prince Tyagi	LFS	9	Navjot Kaur	Chemistry
5	Kushagra Yadav	Chemistry	10	Ena Sharma	Chemistry

Deen Dayal Upadhyaya College

Project Title: A study of Physio-Neuro-Psychological Aspects of Archers in Indian Perspective

Project Code: DDU-102

Archery in India: Flying High

Findings (4-5 lines): The main purpose of this study was to compare pre-competitive anxiety and post-competitive anxiety in Inter- University and National level championships of archers. Data were collected from athletes using a CSAI-2 (Competitive State Anxiety Inventory 2) by Martens, Vealey & Burton (1990). The t-test was used to test the effect of anxiety level between pre and post competition. The significance level was determined as $p<0.01$. The result of the study reveals that there was significant difference in 0.01 levels of pre-competitive anxiety and post-competitive anxiety among the male and female players.

Faculty: Dr. Anek Goel (Physical Education), Dr. Monika Bansal (Business Studies), Dr.P L Meena (Physics & Electronics)

Mentor: Dr. Rajesh Talwar, Sr. Consultant Anaesthetist, R G Stone Hospital.
Email: docrajeshtalwar@gmail.com

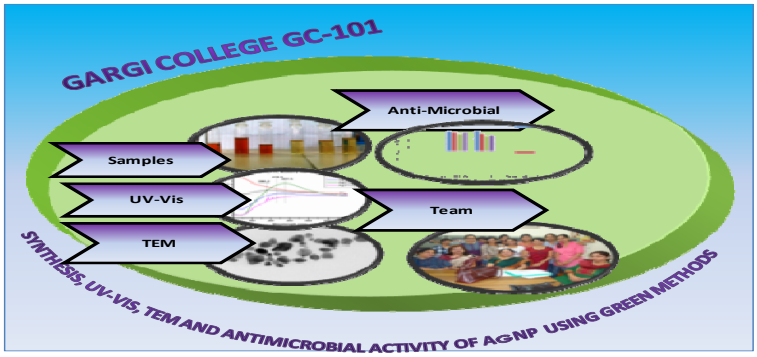
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Praveen Kr. Jha	English	6	Varun Kumar	Physics
2	Chinki Rani	Humanities	7	Srishti Bedi	Physics
3	Hitesh	Humanities	8	Vishwajit Nagar	Physics
4	Amit Kumar	Physics	9	Geetanjali Yadav	Physics
5	Anupriya	Physics	10	Richa Makker	Humanities

Gargi College

Project Title: Synthesis and Characterization of Novel nanomaterials using green methods for anti-microbial applications

Project Code: GC-101



Findings (4-5 lines): The project demonstrates and advocates the use of greener alternatives. The effects of harsh and toxic chemicals can be suitably replaced by benign materials. In the present investigation, the synthesis of silver nanoparticles (AgNP) has been done using plant extracts. The AgNP have been synthesized using mulberry tree leaves extract. These materials have been characterized by various techniques such as UV-Vis and Transmission Electron Microscopy (TEM) etc. The studies have been on the stability of the developed materials with time. These studies have shown anti-microbial inhibition against E-coli. Further comparative studies are underway for stability as well composition dependence. Apart from training undergraduates, presenting our work in international conference, a strong message is delivered- to adopt green alternatives in research.

Faculty: Dr. Vandna Luthra (Physics), Dr. Indu Sidhwani (Chemistry), Dr. Kavita Vasdev (Microbiology)

Mentor: Prof. Mangala Joshi, Indian Institute of Technology, Delhi
Email: mangalajoshi9@gmail.com

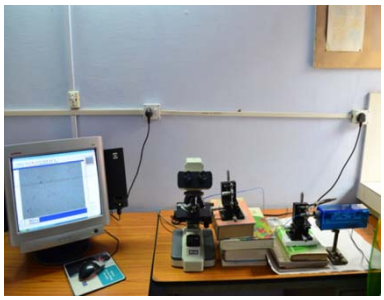
Students:

S.No.	Name	Department	S.No.	Name	Department
1	Sanjoli Saraswat	Physics	6	Dimple Sharma	Chemistry
2	Sobiya	Physics	7	Remy Das Thakur	Chemistry
3	Rajeshwari Barman	Physics	8	Amulya Kashyap	Microbiology
4	Gazal Gupta	Physics	9	Shreemoyee De	Microbiology
5	Pooja Vadhera	Chemistry	10	Namrata Saha	Microbiology

Gargi College

Project Title: To Device a cost effective set up for Cell Identification, Characterization and Separation

Project Code: GC-102



Assembly of the Set-Up

Findings (4-5 lines): Highly cost effective set-up consisting of He-Ne laser, single mode optical fiber and digital microscope has been developed and experiments were conducted to study the optical characteristics of *E.coli* and blood cells. High lights of our findings are as follows:

- Observation on operation of biological forces at microscopic level.
- Demonstration of the optical characteristics of *E.coli* and different blood cells by changes in motility and deflection of cells due to radiation pressure.
- Optical trapping of *E.coli* and blood cells.
- Unique observation of oscillations of RBC and trailing of RBC when exposed to laser using single mode optical fibre.
- Separation of the blood cells by using a laser beam.
- Observation of 2-D rotation of red blood cells when exposed to two laser beams in opposite direction

Faculty: Dr. Neelam Sachdeva (Zoology), Dr. Alka Garg (Physics), Dr.Nisha Gupta (Physics)

Mentor: Dr. A.K. Singh
Deptt. of Zoology, University of Delhi.
Ph: 9718421412, Email: singhak.du@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Meenakshi Jha	Zoology	6	Manisha Yadav	Physics
2	Lui Chatterjee	Zoology	7	Jyoti Tyagi	Physics
3	Pragya A Lama	Zoology	8	Varsha Yadav	Physics
4	Juwariah Khan	Zoology	9	Lochan	Physics
5	Pooja Govil	Zoology	10	Richa	Physics

Gargi College

Project Title: Daastan-e-Nisvaan (Stories of Women)

Project Code: GC-103

Discovering Flexibility through Movement
Photo by Sukhman Dhillon

Findings (4-5 lines): This project involved innovation and creativity from its inception. An in-depth research on the four women characters: Sappho, Gargi, Portia and Kannagi helped the students to understand them not as epitome of soft virtues but as game changers. Workshops with the mentor and other resource persons helped the students to script and produce a powerful play: Daastan-e-Nisvaan (Stories of Women). Our play interrogates, celebrates and extends the choices made by these women in new relevant contemporary situations.
The play was staged in the Gargi College Auditorium on the 19th of January for the first time for our and other college students, faculty members and NGOs. The play will be performed again during Antardhvani.

Faculty: Dr. Anjana Neira Dev (English), Dr. Chhaya Sawhney (Elementary Education), Dr.Veena Sharma (Hindi), Dr. Shweta Mishra (Political Science)

Mentor: Dr. Avijit Dutt, Yatrik Theatre
Ph: 98111045138, Email: avijit@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Tanvi Gupta	Zoology	6	Ajita Dhalia	Pol. Science
2	Punarbhav Banik	Pol. Science	7	Megha Sharma	Hindi
3	Riju Priya Borah	English	8	Sandhya	Hindi
4	Bhavana Singhal	English	9	Varsha Arora	B.El.Ed
5	Fatimah Kanth	Pol. Science	10	Suniti Majhi	B.El.Ed

Hansraj College

Project Title: राष्ट्रीय राजधानी क्षेत्र में दृष्टिबाधितों से संबंधित संस्थाओं एवम् संस्थानों की उपलब्धियाँ एवम् चुनौतियाँ

Project Code: HR-101

1 फरवरी 2013 को हंसराज महाविद्यालय के संगोष्ठी कक्ष में "चुनौतियाँ और उपलब्धियां की संस्थाओं सम्बन्धित से दृष्टिबाधितों में त्रक्षे राजधानी राष्ट्रीय" भट्टाचार्य अशोक श्री से बाएं शामिल वक्ता गण,प्रो रामबक्ष,श्री एस के रुंगटा एवं श्री के सी पाण्डेय)

उपलब्धियां : 1. दृष्टिबाधितों से सम्बन्धित संस्थाओं ने विद्यालयों,छात्रावास,जरुरी बुनियादी सुविधाएँ मुहैया कराकर उच्च शिक्षा हेतु बेहतर माहौल बनाने में सहायता की है।

2. विभिन्न संस्थाओं द्वारा जरुरी प्रशिक्षण की व्यवस्था कर दृष्टिबाधितों को रोजगार के योग्य बनाने का निरंतर सफल प्रयास।

3. दृष्टिबाधितों को अपने सामाजिक,राजनीतिक एवं विधायी अधिकार दिलवाने और इस दिशा में जागरूक बनाने का सक्रिय प्रयास।

4. संस्थाओं द्वारा विभिन्न प्रतियोगिताओं,छात्रवृतियों,सेमीनार,कार्यक्रमों,सांस्कृतिक-साहित्यिक आयोजनों,तकनीकी सुविधाएं एवं उपकरण उपलब्ध कराकर मुख्यधारा से
जोड़ने का व्यापक प्रयास।

चुनौतियाँ : 1. दृष्टिबाधितों के लिए काम करने वाली संस्थाओं का परस्पर एवं शासन से समन्वय का आभाव।

2. वित्तीय संसाधन एवं प्रबन्धन की कमी।

3. दृष्टिबाधितों से सम्बन्धित संस्थाओं के लिए बुनियादी संरचना की कमी।

4. सम्बन्धित संस्थाओं की आवश्यकताओं,जबाबदेही,जरुरी आंकडें एवं कार्यान्वयन के सम्बन्ध में स्पष्ट नीति का अभाव।

Faculty: Dr.Rama (Hindi), Dr. Sateesh Kr. Mishra (Sanskrit), Dr.Vijay Kr. Mishra (Hindi)

Mentor: Prof. Rambux, Centre of Indian Languages, JNU, New Delhi.
Ph. 9868429470, Email: rambux@mail.jnu.ac.in, rambux.jnu@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Ankita Chauhan	Hindi	6	Lalita Sharma	Hindi
2	Aanchal	Hindi	7	Harendra Kumar	Hindi
3	Zahid Abbas	Hindi	8	Manoj	Sanskrit
4	Ramesh Vashisth	Hindi	9	Mani Bansal	B.Com Hons
5	Brijesh	Hindi	10	Sahil Ramchandani	B.Com Hons.

Hindu College

Project Title: Green Approach for the Extraction of Hazardous Heavy Metal ions and Dyes from Waste water using Synthetic and Natural Wastes

Project Code: HC-101

Findings (4-5 lines): Recent years have seen the development of green technologies for addressing problems of waste water pollution caused by heavy metals and dyes.Our project contributes in this area by exploring and evaluating the use of low cost adsorbents and biosorbents for the efficient removal of toxic contaminants from industrial effluents. Amongst the nearly 10 adsorbents chosen, promising results as potential adsorbents have been shown by neem leaves and chana skin. The work done has been presented in Internatinal/ National level Conferences at Ranchi, Jaipur and Delhi.

Faculty: Dr.Anju Srivastava (Chemistry), Dr.Reena Jain (Chemistry), Dr.P K Sinha (Zoology)

Mentor: Dr. V.K Gupta, Indian Institute of Technology, Rorkee.
Email: vinodfcy@gmail.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Aditi Jain	Chemistry	6	Himanshu Singh	Chemistry
2	Anjali Sharma	Chemistry	7	Amit Tiwari	Chemistry
3	Yougant Airan	Chemistry	8	Niyati Seth	Phy. Sc. (Chem)
4	Vivek Poonia	Chemistry	9	Tanu Saroha	Zoology
5	Rohi Khuarana	Chemistry	10	Srishti Chakravorty	Zoology

Hindu College

Project Title: Isolation and characterization of metal corrosion inducing bacteria from the polluted water and development of inhibitors of Microbial Induced Corrosion (MIC)

Project Code: HC-102

Student preparing the pure culture of microbes.

Findings (4-5 lines): Three microbes *Pseudomonas fluoriscens, Rugeria atlantica & Cladosporium oxysporum* were confirmed that they cause the Microbial induced corrosion (MIC).

- *Rugeria atlantica* was found that it causes the maximum corrosion that was confirmed by the weight loss and gravimetric, methods.
- Among the four inhibitors used all showed nearly same results for corrosion inhibition.
- Gravimetric and electrochemical studies show same results.
- These results were further supplemented by the Scanning electron and Atomic Force Microscopy.

Faculty: Dr.Rajesh Kumar (Botany), Dr.Anuradha Sharma (Botany), Dr.Sudershan Kumar (Chemistry)

Mentor: Dr. Ved Pal Singh & Prof. Gurmeet Singh
Deptt. of Botany & Deptt. of Chemistry, University of Delhi.
Email: vpsingh.biology@rediffmail.com & gurmeet123@yahoo.com

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Aashima Mehra	Botany	6	Tinku Jangra	Chemistry
2	Srishty Priya	Botany	7	Swati Girdhar	Chemistry
3	Monica	Botany	8	Alisha Gogia	Chemistry
4	Siddharth Banarjee	Botany	9	Kamlesh Kumar	Chemistry
5	Gaurav Kumar	Chemistry	10	Siddharth Singh	Botany

Hindu College

Project Title: Innovation Projects for Learning Science-Design, Spread and Documentation

Project Code: HC-103

Participants making A LINE FOLLOWER ROBOT in a workshop December 14-17, 2012

Findings (4-5 lines): DESIGN:

A number of innovative projects in the following fields have been designed and developed by the core team:
Instrumentation (10): Example; Emf/pH, Conducto, Thermo, Colorimeter.
Computer Software (100): Example; Plot of pH metric titration curves, p_z orbital shapes, d_z^2 orbital shapes in QBASIC as well as in C++ Languages.
Computer Embedded System (10): Example; A Programmer, Night Lamp Saver, A Line Follower Robot, Crono Thermometer.
Science Demonstration (70): Example; Egg in a bottle, Non burning Rupee note, Oscillatory Reactions, Battery Operated Chemical Reactions.
SPREAD:
The above mentioned projects are tested during five workshops conducted during vacations for students and teachers of various institutions.

DOCUMENTATION: Two manuals **QBASIC and C++ Programs for Physical Chemistry Problems** and **Science Demonstration-Home Experiments** are prepared.

Faculty: Dr. Chand K Seth(Chemistry), Dr.Saroj B Malik (Mathematics), Dr.Adarsh Singh (Physics)

Mentor: Prof. Monika Dutta, Deptt. of Chemistry, University of Delhi.

Students:

S.No.	Name	Department	S.No.	Name	Department
1	Tanu Gera	Chemistry	6	Manisha Varyani	Chemistry
2	Kushagra Gehlot	Chemistry	7	Anuradha	Chemistry
3	Akshat Aggarwal	Chemistry	8	Meenakshi	Chemistry
4	Surabhi Gupta	Chemistry	9	Sahil Malhotra	Chemistry
5	Deepshikha Arora	Chemistry	10	Nikhil Kher	Mathematics