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ACHARYA NARENDRA  
DEV COLLEGE

2012 ANNUAL  
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2011-12

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As they say this world is timeless, but the wheel of time does roll over. Thus it is time again to present the accounts and balance sheets of the achievements, the events, the acts etc. for the year gone by. Ours being an academics oriented enthusiastic, dynamic and vibrant College, has its own saga of growth written on time line to be shared with you all through this record of facts and figures named '**Annual Report 2012**'.

## I. RESEARCH INITIATIVES

Acharya Narendra Dev College in the last few years has become a research hub encompassing all major academic disciplines from Life Sciences to Physical Sciences, from Mathematical sciences to Computer sciences. Name a key area in basic or applied sciences, there will, in probability, be a researcher in the college. It will not be an exaggeration if Acharya Narendra Dev College claims to be standing apart from the rest of the colleges of the University of Delhi, where even the undergraduate students are inspired and motivated to explore science. The college firmly believes in academic growth of each and one here by providing a conducive environment and openings of newer academic opportunities, be it in the form of a large number of research projects undertaken by its faculty or arranging summer programmes and training workshops, series of lectures aimed towards enriching the students as well. As a result the college has acquired a brigade of young researchers backed by experienced mentors from among the teachers.

## A. RESEARCH ACTIVITIES AT UNDERGRADUATE LEVEL – *catch'em young*

### 1. SPIE Student Chapter Acharya Narendra Dev College at University of Delhi

It was an occasion of great honour and privilege when Acharya Narendra Dev College joined the family of SPIE – **Society of Photo-optical Instrumentation Engineers by opening SPIE Student Chapter Acharya Narendra Dev College at University of Delhi** in August 2010. With this the college joined the elite class of institutions like Stanford, MIT, IITs, NITs, and DTU etc. The chapter was formally inaugurated in February 2011 by Professor K.N Tripathi, Ex Vice chancellor, Dr. B.R. Ambedkar University, Agra.

The SPIE student chapter is open to all students of the University of Delhi. The chapter, which started with ten members, has now grown to a family of **twenty two** and there is a concerted effort to increase membership. The SPIE offers activity-grants based on the number of members in the chapter. Last year, the members used a share of this grant to organize its first two-day workshop on **Digital Holography**, in which eminent speakers like Professor Kehar Singh and Dr. Jobby Joseph from IIT, Delhi were invited for talks. The workshop saw huge participation from the students and subsequently one of the student-members Pratik Chakravarty of B.Sc.(H) Electronics Part III got the 'Officers travel grant' of USD 2000 for presenting his paper in the SPIE OPTICS + PHOTONICS Conference in San Diego, California – SPIE's biggest event of the year. Student members were also involved in an outreach programme on 'Optics' in various schools in Delhi. A group of undergraduate

students carried out discussions and demonstrations on basic behaviour of light, such as reflection, refraction, eye defects etc. These were carried out in an interactive mode with the school students showing excellent participation.

Following members of the chapter got opportunities to showcase their talent in international and national level conferences.

1. **Pratik Chakravarty** presented a paper '**Laser Based Studies in Geometrical Optics at School Level**' in SPIE Optics + Photonics 2011, during August 20 – 25, 2011 in San Diego, California.
2. **Kanika Sandhu** and **Purnima Wadhawan** presented papers in the conference 'COE 2011', Kolkata which was jointly organized by the SPIE CHAPTER, JIS Engineering College and University of Calcutta.

Other activities organised by the ANDC SPIE students chapter included a two-day workshop on 'Thin Films and their Applications' organised during February 24-25, 2012. The workshop was attended by 39 students belonging to Department of Electronics and Department of Physics. Invited talks were delivered by eminent speakers like Padmashri Professor K.L. Chopra, Ex-Director, IIT Kharagpur, Professor Vinay Gupta, Department of Physics and Astrophysics, University of Delhi, Professor P.K. Bhatnagar, Department of Electronic Science University of Delhi and Dr. Monika Tomar, Department of Physics, Miranda House, University of Delhi. The hands-on sessions were held at the Department of Physics and Astrophysics, University of Delhi. During hands-on sessions students were exposed to different tools and techniques in various laboratories like Fabrication lab, Plasma lab, Ceramic

lab, Pulsed Laser Deposition lab, RF Sputtering lab, Surface Plasmon Resonance lab etc. This workshop was organized by Dr. Amit Garg (Convenor) and Dr. Arijit Chowdhuri (Co-Convenor).

The Chapter at ANDC plans to design a 'low cost optical fibre kit' and envisages an outreach programme in which the kit would be demonstrated and freely distributed in schools, It also intends taking an excursion to research laboratories outside Delhi to provide a wider exposure to the students.

The methodology adopted in promotion of undergraduate research has been appreciated and published in Global talent newsletter, a digital Daily Science and Innovation newsletter published from Barcelona under new models of learning (<http://www.en.globaltalentnews.com/reflection/tribunes/5364/New-ways-to-communicate-and-learn-science.html>), which read as under.

*“four students at the University of New Delhi, Vaibhav Sharma, Avdesh Kumar Singh, Zameer Khan and Deepak Joshi, along with Professors Amit Garg, Vishal Dhingra and Reena Sharma carried out a project that is inspiring for two reasons. The project “Investigating science hands-on to promote innovation and research at undergraduate level” brought science and technology closer to high school students while also enabling university students to see through a research project from the beginning until the publication of the results at a conference.*

## **2. Summer Projects and Training Workshops for Students**

Over the last five years, in the college we have laid great stress on hands-on project-based learning. Students have been

encouraged to participate in summer training/workshops/ research projects. Some of areas on which we worked with students over last summer include:

*i. Isolation of antimicrobial compounds from soil actinomycetes*

Every year, Dr. Monisha Khanna of the Zoology Department of the college conducts an intensive workshop on research methodologies for UG students in her area of specialization – Microbiology. After the training, students also do a small research project based on their training. This year she organized a one month **Summer Training on Isolation of antimicrobial compounds from soil actinomycetes** during June 22 - July 19, 2011 for students of B.Sc (H) Zoology and B.Sc Life Sciences.

The six trainees got a hands-on experience in the following techniques:

1. Introduction to Biology of Actinomycetes: Preparation of culture media, and maintenance of strains.
2. Biochemical studies on isolates and their morphological identification using light and phase contrast microscopy.
3. Isolation of genomic DNA by large and small scale methods.
4. Agarose gel electrophoresis of DNA samples.
5. PCR amplification of 16SrRNA gene using universal primers.
6. Elution of amplified DNA fragment using Gel Extraction Kits.
7. Extraction of bioactive compounds from culture extracts for secondary screening.

8. Determination of minimum inhibitory concentration (MIC) of the antibiotic compounds.
9. Identification of bioactive components in culture extracts using Thin Layer Chromatography (TLC)
10. Identification of bioactive fractions by Bio autography.

These Summer Training Workshops in her laboratory are a regular feature since 2008 and various areas in which such workshops have been conducted are listed below:

- a. Polyphasic characterization of actinomycetes and analysis of their antimicrobial potential (2010)
- b. Biology and biotechnology of actinomycetes (2009)
- c. Basic techniques in molecular biology (2008)

#### *ii. Summer training in chemistry*

The Department of Chemistry has as usual involved several students in research projects over the summer vacation period. The table below brings out information on the students and teachers involved and the topics on which they worked.

Students' names and Courses	Project title	Supervisor
Akshay Kumar, Akriti Jakhmola, Durgesh Nandan, Ashish Kumar B.Sc. Chemistry (Hons) –III year	Polymeric chemical sensors	Dr. Sunita Hooda



<p>Sapna, Asha, Vicky, Payal Mutreja, Dheeraj Khushwah, Saurabh B.Sc. Chemistry (Hons) –III year</p>	<p>Preparation of trioxalato complexes of Cr (III), Fe (III), Al (III), Co (III) and Mn (III) and their characterization. The effect of different metal ions on crystal field.</p>	<p>Dr. Seema Gupta</p>
<p>Ravi B.Sc. Chemistry (Hons) –III year</p>	<p>Synthesis of lab cleansing reagent.</p>	<p>Dr. Seema Gupta, Dr. Manisha Jain</p>
<p>Monika, Neha Sharma B.Sc. Chemistry (Hons) –III year</p>	<p>Study the kinetics of iodination of acetone by volumetric, colourimetric method and vernier probe and compare the results.</p>	<p>Dr. Neeti Misra In collaboration with Dr. Amit Garg for the use of probe facilities</p>
<p>Ankita, Priyanka Bhati B.Sc. Chemistry (Hons) –III year</p>	<p>Study the kinetics of reaction between potassium iodide and potassium persulphate by volumetric, colourimetric method and vernier probe and compare the results.</p>	<p>Dr. Neeti Misra In collaboration with Dr. Amit Garg for the use of probe facilities</p>
<p>Kiran, Priyanka Rawat, Jyoti Suman, Sandhya, Chandni B.Sc. Chemistry (Hons) –III year</p>	<p>Characterization of polymer samples and their complexes with metals.</p>	<p>Dr. Neeti Misra</p>
<p>Piyush Kumar Tiwari B.Sc. LS-II year</p>	<p>Study the spoilage of curd under various conditions</p>	<p>Dr. Neeti Misra</p>

Manorama B.Sc. Chemistry (Hons) –III year	Synthesis of 2-aminomethyl benzimidazole and 1,2-Bis (benzimidazolyl) ethylamine and their copper complexes	Dr. Manisha Jain
Priya B.Sc. Chemistry (Hons) –III year	Synthesis and characterization of copper complex with 1,5-Bis (2-benzimidazolyl)-3- hydroxy-3-carboxylic acid	Dr. Manisha Jain
Sneha B.Sc. Chemistry (Hons) –III year	Synthesis and characterization of copper complex with 1,4-Bis (2-benzimidazolyl)-1,2- dihydroxyethane	Dr. Manisha Jain
Smriti Chawla, Vishal B.Sc. Chemistry (Hons) –III year	Synthesis of heterocycles having potential biological importance	Dr. Pankaj Khanna  In collaboration with Dr. Leena Khanna, Assistant Professor, USBAS, GGSIP University, Dwarka, Delhi
Neha Tiwari B.Sc. Chemistry (Hons) –III year	Polysaccharide ion exchangers	Dr. Madhubala Raigar

### iii. Training in cloning and expression of bacterial genes

The Department of Biomedical Sciences has been very active in engaging students in UG research. Dr. Urmi Bajpai is involved with the CSIR-OSDD project on Cloning and Expression of *Mycobacterium tuberculosis* genes and

purification of recombinant proteins which provides space for students to learn and do research.

The team for the project consists of Principal Investigator Dr. Urmi Bajpai, a project assistant (Eniyan Kandasamy) and in all twenty seven students of B.Sc. (H) Biomedical Sciences. The objective is to clone and express a select number of *Mycobacterium tuberculosis* genes that shall be tested for their potential as drug targets by other scientists from the OSDD consortium. Students have cloned and expressed genes in suitable vectors followed by purification of the recombinant proteins by affinity chromatography and refolding of those proteins that were isolated as inclusion bodies. Finally assays were performed with the purified protein (two proteins so far, for which assay methods are available).

The best part of the project was observing undergraduate students evolving to 'thinking minds'. They are not only getting proficient in the various techniques but also developing analytical skills, scientific temperament and patience to endure the pain of failed experiments. They learn how to document the results, address a scientific query, search literature etc., gaining tremendous confidence in not only doing the experiments but also to suggest alternatives to the experiments designed for them. It is good to see them working as a team while carrying out their individual objectives.

Following are the list of *Mycobacterium tuberculosis* Rv genes cloned and expressed by the students.

Rv3574 (TetR)	Rv0182c (SigG)	Rv2031c (HspX)	Rv3911 (SigM)
Rv3414c (SigD)	Rv3286c (SigF)	Rv2720 (LexA)	Rv2150c (FtsZ)

Rv2069 (SigC)	Rv2711 (IdeR)	Rv2710 (SigB)	Rv1221 (SigE)
Rv0014c (pknB)	Rv3133c (DosR)	Rv1354c (Hypothetical)	Rv3416 (WhiB3)
Rv0757 (PhoP)	Rv3223c (SigH)	Rv0467 (Icl)	

Following techniques/methods were followed to carry out the project objectives.

1. Designing of gene-specific primers .
2. Analysis (qualitative and quantitative) of DNA by agarose gel electrophoresis.
3. PCR amplification of genes (Gradient-, Hot start and Touch down PCR were carried out).
4. Gel extraction and ligation of PCR amplified genes into pGEM-T easy vector.
5. Bacterial transformation.
6. Blue/White Screening for recombinants.
7. Colony PCR of the recombinants.
8. Isolation of the recombinant plasmids.
9. Restriction analysis of positive clones.
10. Cloning and expression in pET28a-c and in pMALc2x vectors.
11. IPTG Induction, sonication and SDS-PAGE.
12. Western Blotting.
13. Affinity chromatography.
14. In-silico analysis using tools such as BLAST, oilgo-analyzer and web-cutter (for restriction sites).

The following is the status of genes in the project:

Gene Name/ Rv ID	pGEM-T cloning	Sequen- cing	pET28 cloning	Expre- sion	Solub- ility	Purifica- tion
Rv3574 (TetR)	No	Yes	Yes	Yes	SUP/ PELLET	YES/ Soluble
Rv3414c (SigD)	Yes	Yes	Yes	Yes	Pellet	YES/ Refolding
Rv2069 (SigC)	Yes	Yes	Yes	Yes	SUP/ PELLET	YES/ Soluble
Rv0014c (pknB)	yes	Yes	Yes	Yes	Pellet	
Rv0757 (PhoP)	Yes	Yes	Yes	Yes	Pellet	
Rv0182c (SigG)	Yes	Yes	Yes	Yes	Pellet	
Rv3286c (SigF)	Yes	Yes	Yes	Yes	Pellet	
Rv2711 (IdeR)	Yes	Yes	Yes	Yes	SUP/ PELLET	YES/ Soluble
Rv3133c (DosR)	Yes	Yes	Yes	Yes	Pellet	
Rv3223c (SigH)	Yes	Yes	Yes	Yes	Pellet	
Rv2031c (HspX)	Yes	Yes	Yes	Yes	SUP	YES/ Soluble
Rv2720 (LexA)	Yes	Yes	Yes	Yes	SUP	YES/ Soluble
Rv2710 (SigB)	Yes	Yes	Yes	Yes	SUP	YES/ Soluble
Rv1354c (Hypo.)	Yes	Yes	Yes	Yes	Pellet	YES/ Refolding
Rv0467 (Icl)	Yes	yes	Yes	Yes	SUP Pellet	YES/ Soluble
Rv3911 (SigM)	Yes	yes	Yes	Yes	Pellet	

Rv2150c (FtsZ)	Yes	yes	Yes	Yes	SUP	YES/ Soluble
Rv1221 (SigE)	Yes	Yes	Yes	Yes	Pellet	YES/ Refolding
Rv341 (WhiB3)	Yes	yes	Yes	Yes	Pellet	YES/ Refolding

## 2. Student-Projects through the Innovation & Entrepreneurship Development Centre (IEDC)

Pioneering effort of National Science and Technology Development Board (NSTEDB) under Department of Science and Technology (DST), Government of India, in collaboration with Innovation and Entrepreneurship Development Centre (IEDC) established at the college has been involved in promoting innovation and imparting entrepreneurship skills amongst students. They have scheme under which students are encouraged to take up one year long innovative research projects under the guidance of a faculty popularly referred to as a mentor. These projects are fully funded by DST and include a stipend for the students.

Given below is the list of such projects that were taken up in the year 2010-11:

S. No.	Name of Projects	Name of Students and Mentors	Class
1.	CASE Tool Box	1. Arani Adhikari 2. Vikas 3. Manpreet Singh Anand Dr. Vibha Gaur (Department of Computer Science)	B.Sc. (H) Computer Science Part III B.Sc. (H) Computer Science Part III B.Sc. (H) Computer Science Part II

2.	Low Cost Glucometer Development	1. Paritosh Dwivedi 2. Sidharth Sharma 3. Natish Kr. Mallick 4. Dharmender Kr. Mahato 5. Himanshu Bhatt 6. Reema Kathuria Dr. Amit Garg (Department of Electronics)	B.Sc. (H) Electronics Part I B.Sc. (H) Electronics Part I B.Sc. (H) Electronics Part III B.Sc. (H) Electronics Part III B.Sc. (H) Bio Medical Science Part II B.Sc. (H) Bio Medical Science Part II
3.	Identification and formulation of products from weed extracts exhibiting anti-mosquito potential	1. Abhay Pratap Singh 2. Sahil Batra 3. Gokul Nair Dr. Sarita Kumar (Department of Zoology)	B.Sc. (H) Zoology Part III B.Sc. (H) Zoology Part III B.Sc. (H) Zoology Part III
4.	Development of New Eco-friendly Natural Dyes from Potential Plants materials for dyeing different textile materials	1. Archana Yadav 2. Deepak Verma 3. Pooja Kumari 4. Rishi Mr. Sanjay Vohra (Department of Zoology)	B.Sc. Applied Physical Science (Sericulture) Part III

A brief description of the aforementioned projects is mentioned as hereunder

**CASE Tool Box** – CASE an abbreviation for Computer Aided Software Engineering refers to tools that assist software

engineers automate activities for software development. Some of the CASE tool applications include requirement analysis, risk management, project management, configuration management etc. CASE tools like Microsoft VISIO, Rational Rose do exist commercially but their high prices, language dependence and complicated user interface severely hamper their acceptance in the market. The project involved development of a prototype CASE tool locally that does not suffer from the aforementioned limitations.

**Low Cost Glucometer Development** – The project involved addressing one of the most basic problems faced by people especially belonging to rural and semi-urban areas in India, wherein the problem of lifestyle disease diabetes has spread in epic proportions. The primary objective of the project entailed development of a low cost glucometer that could compete with those being marketed by mega conglomerates in terms of performance, compatibility with existing glucose testing strips, dependable results while keeping the cost minimal for the targeted population. The competition involved creating a new belief against two well-established models like AccuChek and GlucoOne from Dr. Morepan. The project has been a resounding success that could be seen from the fact that the glucometer developed in-house could be available for a cost of Rs. 350/- compared to the Rs. 1500/- – Rs. 5000/- price range for the multinational devices. A further advantage with the indigenously developed device is the easy service option wherein all the components could be repaired/replaced locally.

**Identification and formulation of products from weed extracts exhibiting anti-mosquito potential** – Anti-mosquito repellants both for personal and commercial



usage has gained widespread acceptance however, their constant utilization has affected the environment profoundly. Such is the negative impact on the environment that people have already started feeling the ill-effects and hence a need for eco-friendly anti-mosquito concoctions is the need of the hour. The project aspires to use the possible use of weed extracts for the control of mosquito larvae as an eco-friendly, safe and cost effective technique leading to decreased over-reliance on the synthetic insecticides. The project has successfully completed establishment of mosquito culture, collected relevant weeds, prepared specific extracts and performed Larvicidal Bioassay. Further, fecundity and hatchability studies, behavioural studies, morphological studies have been carried out and also formulation of the extracts as tablets. Possible innovation at later stage, scalability issues and market and growth potential are in the process of being worked out.

**Development of New Eco-friendly Natural Dyes from Potential Plants materials for dyeing different textile materials** - The project aims to develop eco-friendly dyes for dyeing different types of fabric. Conventional dyes are known to be skin irritants besides known causes of various types of cancer and worldwide there is a need for eco-friendly, safe and cost-effective technique for colouring fabrics. In the present work silk is chosen as the natural fabric to be dyed and natural dyes are extracted for application while keeping in view the economic viability. That the fabric retains its original lustre and brightness even after application of the dye is an important criteria and it is shown that careful choice of mordant helps maintain the

same. Mordants besides acting as a fixing agent could be seen to produce faster shades. The role of the temperature vis-a-vis process of dyeing and soaking of fabric in water could be seen to affect its properties. Thus far process of collection of plants as a source of dye, optimization of method of extraction of dye, preparation thereof, dyeing of silk fabric, printing and steaming have been carried out.

**The projects sanctioned by DST for the year 2012 are as follows:**

S. No.	Name of Projects	Name of Students	Mentor
1.	Formulation of medically important products from Silk Cocoons waste	1. Gokul Nair 2. Abhishek Satyam 3. Anubha Seth	Dr. Sarita Kumar, Mr. Sanjay Vohra (Department of Zoology)
2.	Development of phototherapy blanket for treatment of jaundice in infants	1. Jatin Bothra 2. Shah Alam 3. Parveen Kr. Jha	Dr. Amit Garg (Department of Electronics)
3.	Use of bioluminescent ciliate sensors as an alternative method for measuring heavy metals in fresh water samples	1. Prateek 2. Kritika 3. Harshita	Dr. Seema Makhija, Dr. Ravi Toteja (Department of Zoology)
4.	Formulation of biodegradable and low cost liquid detergent for laboratory glassware	1. Ravi Kumar 2. Namrata Chakraborty 3. Akash	Dr. Seema Gupta, Dr. Manisha Jain (Department of Chemistry)

5.	Fabrication of novel polysaccharide based Biosensors as Ion Exchanger	1. Durgesh Pradhan 2. Ayush 3. Kavita Rrawat	Dr. Sunita Hooda, Dr. Madhu Bala Raigar (Department of Chemistry)
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## B. RESEARCH PROJECTS

The academic hunger, enthusiasm and zeal of the faculty and students finds satiation in a large number of research projects run by them for last many years. Following research projects that are currently running have turned the college into a mini research centre.

### 1. Fabrication of new polymeric sensors for environmental protection

UGC Project, PI: Dr. Vandana Uberoi. Co-PI Dr. Sunita Hooda and Dr. Geetu Gambhir (01.04.2008, Rs 7.57 Lakhs)

This project, concluded in April 2011, was aimed to install cost effective, efficient and convenient technology that can measure various metal ions like  $Hg^{2+}$ ,  $Cr^{3+}$  and  $Cd^{2+}$  etc. before they get into the water. Water being an excellent solvent, is most severely threatened by industrial waste. So the efforts were to develop a chemical sensor to produce good quality pure water for health. The procedures for the development of chemical sensors using polymer matrices offer unexplored possibilities in the field of control of environmental pollution. It is important to determine the concentration of poisonous metal ions in air and water

samples. With the development of new polymer matrices which are highly selective, especially for bivalent/trivalent metal ions, industrial and sewage effluents could be well treated to obtain good drinking water. The main objective was to develop new synthetic polymer matrices with good sorption properties toward bivalent and trivalent metal ions which could further be used for fabrication of chemical sensors. Their performance in different water samples was tried. The increasing use of ion sensors in the fields of environmental, agricultural and medicinal analysis is stimulating analytical chemists for selective determination of various species. The electrochemical sensors developed so far can easily be set up and are found to be extremely simple and economical. These sensors find wide applications in medical, environmental and industrial analysis. Dr. Sunita Hooda along with Mr. Amit Kumar a student working in the capacity of project associate synthesized the copolymers and set up the conditions for the synthesis of copolymer membrane. The conditions were optimized for the preparation of ion selective electrode for various metal ions. The work is still in progress. The results obtained shall be sent for publication.

## **2. Investigating Science hands-on to promote innovation and research at the undergraduate level**

UGC Project, PI Dr. Amit Garg, Co-PI: Dr. Savithri Singh and Mr. Vishal Dhingra (3 years 1.2.2009, Rs 10.54 lakhs)

In the ongoing UGC funded project under the supervision of Dr. Amit Garg, undergraduate students of different disciplines in the college are being imparted training not only to automate various experiments using

computer interfaced sensors but also how to work in an interdisciplinary environment. Students from Electronics, Physics, Chemistry and Life Sciences have been exposed to real , cutting edge technologies such as different types of sensors like light sensors, magnetic field sensors, motion detectors, conductivity probes, colorimeters, dissolved O<sub>2</sub> sensors to name a few and various data acquisition devices including sensor DAQ based on LabVIEW and LabQuest. In the last one year, students have presented and published four research papers in various National and International conference proceedings. The students include Kanika Sandhu and Purnima Wadhawan who presented their work in Convergence of Optics and Electronics (COE) 2011, Kolkata, Dharmendra Kumar Mahato and Komal in National Conference on Excellence in Higher Education, Indian Institute of Technology, Delhi and Pratik Chakravarty in Optical Engineering + Applications (SPIE Optics + Photonics) conference , San Diego, California, USA.

The methodology adopted in one of our papers “Promoting Science at School Level through hands-on Experiments” as an extension activity on promotion of undergraduate research has been appreciated and published in Global Talent newsletter published from Barcelona under new models of learning. It is a digital Daily Science and Innovation newsletter.

### **3. Metal Complexes as Anticancer Agents: Synthesis, Characterization and their Tumorogenesis Evaluation.**

DBT Project, PI: Dr. Vikrant Kumar, 3 years from April 2010, Rs 16.11 lakh)

The project involves highly innovative studies which combine synthetic chemistry and biomedical research, so as to improve bio-distribution, specificity and biological recognition for cancer chemotherapy. The properties of transition metals lend themselves to drug discovery, particularly those pertinent to interactions with biological molecules. The detailed methodology of the work plan is under the following segments:

Synthesis of several transition metal (Co, Fe, Cu, Zn, Ti, Ru, Au etc.) complexes with anti-cancer activity. The focus is on tailoring of ligands (containing nitrogen, sulphur, and oxygen donor atoms), which might have or contribute to antimelanoma activity. Some ligands having desired functional groups for the purpose are selected and tailored. Description is as follows:

- Novel thiazolidinone ligands (L1 and L2): Two novel substituted-thiazolidinone precursor compounds 1-thia-4-azaspiro[4.4]nonan-3-one (L1) and 1-thia-4-azaspiro [4.5] decan-3-one (L2) containing cyclopentane and cyclohexane rings respectively were synthesized.
- Complexes [ML1/ L2 barb/thiobarb]: Template synthesis of twenty transition metal complexes [M = MnII, CoII, NiII, CuII, ZnII] of thiazolidinone compounds (L1 and L2) with barbituric acid and thiobarbituric acid were successfully achieved.
- All the synthesized compounds have been characterized using a wide range of modern experimental techniques (e.g. IR, NMR, UV-vis, mass-spectrometry etc.)
- Cell viability (MTS) assays in Liver cancer cell lines of newly tailored ligands and their metal chelates

- 7 Human Liver cancer cell line (Hep G2) were exposed to the synthesized ligands and their metal complexes for 96 hours across a concentration (500µg/mL) and cell viability measured by MTS assay. All experiments were set up in triplicates to determine means and standard deviations.

Metal complexes of L2 showed more toxicity to the cell in comparison of the L1 metal complexes.

In our next attempt we designed and determined the experimental conditions for new 14-19 membered tetra-aza macrocycles based on oxamide functional group with an extensive range of ring sizes. The macrocycles are isolated by simple condensations without inducing “metal ion template effect or high-dilution reactions”.

Novel ligands from the substituted salicylic acid, imidazole, pyrazole, piperazine classes are under examination involving a wide range of modern experimental techniques.

#### **4. Development of a Free Software on Clustering Streams**

The project is sanctioned from University of Delhi in May 2011 for the period of 6 months. Principal investigator is Dr. Vasudha Bhatnagar, Department of Computer Science with two co-supervisors Ms. Sharanjit Kaur from Acharya Narendra Dev College and Dr. Anita Goel from Dayal Singh College. The amount sanctioned is used for giving honorarium to the Post Graduate students who opt for working on this project. The project's objective is to build a open mining tool for clustering using open source software and to train MCA/M.Sc students of the department to work as a software project team, for development of a working prototype.

The goal of mining tool is to deliver exclusive and complete clustering of data streams with mixed attributes. Tool delivers natural, arbitrarily-shaped clusters underlying in prevailing data distribution without making any assumption on the number of clusters. It generates clusters in specified windows where each window size needs not to be same. The clustering scheme delivered is amenable to understandable description in terms of cluster characteristics.

### **Research Projects in Pipeline – have been submitted and awaiting approval**

- 'Screening actinomycetes for presence of antimicrobial compounds', submitted to Department of Science and Technology (DST) on March 13, 2011 by Dr. Monisha Khanna, Department of Zoology.
- 'Extraction and activity analyses of extracellular enzymes from soil Actinomycetes', submitted to University Grants Commission (UGC) in 2011 by Dr. Monisha Khanna, Department of Zoology..
- Stress induced induction of metallothioneins gene in ciliates and use as biomarkers to assess environmental pollution, submitted to UGC in 2011 by Dr. Seema Makhija and Dr. Ravi Toteja, Department of Zoology.

### **C. RESEARCH SUPERVISION**

It is not easy in the University of Delhi to get recognition as a PhD research guide for the members of the Science Faculty in colleges, because of the laboratory infrastructure required for carrying out the research. Colleges are usually not able to provide space and infrastructure to teachers for their



individual laboratories. But, at ANDC we have a policy that any teacher who is able to get funding for research projects will be provided some space for carrying them out.

The following faculty members have been recognized by the Board of Research Studies (Science) of the University of Delhi as Research Guides to supervise Ph.D. work of research students.

Dr. Monisha Khanna: Currently, Ms. Renu Solanki, an SRF (CSIR), is pursuing her Ph.D. on Microbial Diversity since May 2007 at Acharya Narendra Dev College.

Dr. Urmi Bajpai registered a Ph.D. student in Biomedical Sciences to work in the area of 'New Drug Targets for *Mycobacterium Tuberculosis*' as a supervisor in December 2011.

Dr. Sarita Kumar registered following students for Ph.D. under her supervision.

- Ms. Radhika Warikoo (UGC-NET) to work on Isolation, Identification and Characterization of Bio-Active Components in Breeds with Anti Mosquito Potential.
- Ms. Monika Mishra, CSIR-NET to work on Behavioural Implications of Post Host Parasite Interaction in *Helicoverpa*.

Dr. Sunita Hooda of the Chemistry Department has also been recognised as a guide.

All these research activities spread over years have resulted in a large number of research publications (Details for current year in Annexure) and consolidation of a massive imposing research establishment in the form of state of art laboratories and equipments. Here is a short list of instruments we added recently in the college:

**D. RESEARCH INFRASTRUCTURE ADDED**

S.No.	Laboratory	Facility
1.	Instrumentation Laboratory	Gel Documentation System Gradient PCR Lyophilizer Phase Contrast Microscope Refrigerated Incubator Shaker Dot-Blot System with vacuum pump UV-Vis Spectrophotometer Cold Centrifuge Rotavapor B.O.D. Table top centrifuge Gel Electrophoresis assembly Horizontal and Vertical Transilluminator - 80°C Deep Freezer Vacuum based plasma generation Thermal evaporation
2.	Chemistry Research Laboratory	Digital Melting Point Apparatus Centrifuging Machine Vacuum Rotary Evaporator Vacuum Pump Vacuum/Hot Air Oven Microprocessor based pH meter with printer Constant temperature bath Polarimeter (Digital) pH –cum-Potentiometer Others (Magnetic Stirrer, Refrigerator, Nitrogen cylinder with regulator etc.

## II. OER INITIATIVES AND FOSS

Acharya Narendra Dev College firmly believes in the adoption of Free Open Source Software (FOSS) as an instrument of inclusive digital education and breaking the shackles of restrictive licensing policies in education. Since 2007, the College has taken pioneering steps to promote FOSS in education and creation and propagation of Open Educational Resources (OERs). In affirmation of our conviction in the 'Open' culture, which in nutshell means benefiting all by sharing, we have always worked to consolidate earlier efforts, which have now started bringing recognition not only nationally but also in the international arena.

The OER work has brought the Principal and the college international recognition and hence Dr. Savithri Singh has been invited for diverse international fora in view of her expertise in the area of OER.

- Invited by the OER Foundation to attend the international open educational resources strategic meeting for implementation of the OER Tertiary Education Network – the OER University: 9 - 10 November 2011, Dunedin, New Zealand. Dr. Singh was invited as an expert at the meeting along with other education leaders and decision-makers from UNESCO, the Commonwealth of Learning and thirteen founding anchor partner colleges and universities from Africa, Australia, India, Canada, New Zealand, South Africa and the United States of America.
- Invited in March 2011 to be part of a study on 'Use and Reuse of OER in the region' being carried out by Professor Raj Dhanarajan, Hon. Director, Institute for Research and Innovation, Wawasan Open University,

Penang, Malaysia.(Study conducted by Dr. Singh and Dr. Sarita Kumar).

- Invited by CEMCA to conduct a workshop on “Introduction to collaborative E-content Development” in Bangladesh from March 31 to April 02, 2012 for 20 participants from Rupantar and partner agencies. She would introduce participants to Wikieducator and Easy Now package and open source software and ensure availability of the same to workshop participants. The content developed would then be uploaded on the Wikieducator and CEMCA websites.

Acharya Narendra Dev College has also been invited by UNESCO Bangkok, together with the UNESCO Headquarters and Commonwealth of Learning, to the Policy Forum for Asia and the Pacific: Open Education Resources in Bangkok on 23-24 April 2012. Dr. Savithri Singh would be attending the workshop.

Dr. Savithri Singh has been identified as one of five experts worldwide to help Wawasan Open University for an IDRC, Canada, funded project on “Planning Southern Research on Open Educational Resources [OERs]”. Among the things she would be required to do would be to guide the project along with other experts in identifying major research themes to form the framework for establishing a southern research network/community; formulate an agenda for wider consultative roundtable; design and develop guidelines and commission regional thematic position papers on the current state of OER play in the region; develop criteria to select and prioritize proposals received through open competition route and set criteria for selecting countries/partners to be

involved through a capacity building and mentoring route. Dr. Singh would be required to participate in meetings held at Chiangmai, Thailand and Jakarta, Indonesia.

Details about these would be presented in the next Annual Report.

### **OPAL AWARD**

I am happy to share a moment of great pride when Acharya Narendra Dev College was announced winner of the prestigious OPAL Award 2011 in the category of 'Award for Institutions' in an investiture ceremony at the Online Education Conference, Berlin, Germany on 2nd December, 2011. This Award recognizes institutions with a policy of encouraging open educational practices through the provision of resources and support for the development of OER, participation in research and development, and a clear strategy for motivating its staff.

The official media release of the OPAL Awards read as under:

“Acharya Narendra Dev College, University of Delhi, India (<http://andcollege.du.ac.in>) was awarded highly commended status in this category for demonstrating strong motivation to change traditional patterns of teaching and a robust process for encouraging the creation of OER based on a self-funding model. The jury gave special mention to the College's work with the University of Mumbai to spread use and reuse externally, and its work to overcome faculty resistance to change.”

The jury for this award was Professor Narend Bajjnath, Pro Vice-Chancellor at the University of South Africa, Professor

Roberto Carneiro of The Catholic University of Portugal, Dr. Emma Kruse Va'ai, Deputy Vice Chancellor of The National University of Samoa and Professor Rory McGreal, UNESCO OER Chair and Associate Vice President at Athabasca University, Canada (Chair).

The OPAL Awards are conceived as part of the Open Educational Quality (OPAL) Initiative ([www.oer-quality.org](http://www.oer-quality.org)), which consists of partners including UNESCO, the International Council for Open and Distance Education, the European Foundation for Quality in e-Learning and a number of leading European universities.

### **OER Content Development by Mumbai University**

The Principal, Dr. Savithri Singh was requested by Commonwealth Educational Media Centre for Asia (CEMCA) of the Commonwealth of Learning (COL), Canada to act as Consultant for development of OER content for some of their first year regular courses of the UG level. In this three colleagues, Dr. Sarita Kumar, Dr. Ravi Toteja and Dr. Neeti Misra, also acted as resource persons in workshops conducted for the purpose.

Mumbai University chose to develop content in the areas of Microeconomics and Soft Skills. The University identified 25 teachers from various colleges who would be part of this pilot project. A 3-day workshop was organised by us at Mumbai University in October 2011 to introduce the teachers to the philosophy of OER and to introduce them to wikieducator as a platform for OER development. The teachers were then asked to create content and upload on the WE platform – their content was regularly monitored from Delhi.

In end November 2011 an advanced 4-day workshop was then held for the Mumbai participants in our college. The materials created were evaluated for its format and appropriateness as OER. Further the open source Learning Management System Moodle was introduced as platform for their materials. The live pages of wikieducator were embedded in Moodle and the facility for assignment, quizzes etc were used from Moodle. This combination of WE with Moodle was much appreciated.

The Project is near completion and soon Mumbai University will be among the first traditional Universities in India to upload OER content. This project was possible only due to the guidance by us.

### **FOSS – SPOKEN TUTORIAL WORKSHOPS**

The College having switched to Linux in most of its laboratories finds it essential to regularly orient and initiate the undergraduate students to the concept of FOSS paradigm. With this perception, FOSS Club at the Department of Computer Science under the aegis of Spoken Tutorial Project at IIT, Mumbai organized workshops using free and open source software to spread awareness. Being a self-study tool, students were encouraged to understand the paradigm shift with Spoken Tutorials along with hands-on experience. Each workshop comprised of a pre-assessment test followed by comprehending the videos of Spoken Tutorials which then ended with given assignments. At the end of workshop, students were assessed based on a post-assessment test and successful students were awarded certificates from the organizers. The series of

workshops on Linux using Spoken Tutorial was conducted during 24 - 25 August 2011, followed by another one on Latex on 28 September, 2011 that provided the students with the expertise to use the tool in scripting, scientific and mathematical documents/reports in different format. Usage of basic commands in LINUX and installation of Ubuntu were also included as part of the curriculum that encouraged exploration of the realm of FOSS.

### III. STUDENTS' CORNER

Students are the most important asset of any educational institution. All the activities of a college therefore revolve around them. Students at Acharya Narendra Dev College are nurtured and shaped in such a way that they are able to enter their lives in a very definite manner.

#### A. STUDENTS' ACHIEVEMENTS, SCHOLARSHIPS AND AID

The college since its inception has always taken continuous and sure strides to build create and provide better academic facilities and opportunities to its academic community. In true quintessential spirit, teaching in the college has progressed steadily not only inside the classrooms but also beyond the classrooms. This clearly is evident from a long list of honours and accolades brought to the institution by the students.

##### 1. Merit Positions

A number of merit positions have been bagged by the students of the college in the examinations 2011.



<b>Position in University of Delhi</b>				
<b>S. No.</b>	<b>Name</b>	<b>Course</b>	<b>Position</b>	<b>Prize amount (Rs)</b>
1.	Ms. Ekta Sachdeva	B. Sc. (H) Biomedical Sciences Semester II	III	2000/-

<b>Positions in University of Delhi at South Campus</b>				
1.	Mr. Sunil Kambhoj	B. Sc. Physical Science (Electronics) Semester I	I	2000/-
2.	Mr. Srijan Sagar	B. Sc. Physical Science (Electronics) Semester I	II	1500/-
3.	Mr. Jai Kumar	B. Sc. Physical Science (Electronics) Semester I	III	1000/-
4.	Mr. Nitish Srivastava	B. Sc. Physical Science (Computer Sc.) Semester I	I	2000/-
5.	Ms. Taruna Negi	B. Sc. Physical Science (Computer Sc.) Semester I	II	1500/-
6.	Ms. Snigdha Singh	B. Sc. Physical. Science (Chemistry) Semester I	II	1500/-
7.	Ms. Sambhavana Chauhan	B.Sc. (H) Botany Semester II	II	1500/-
8.	Ms. Mehak Garg	B. Sc. (H) Computer Science Semester I	II	1500/-
9.	Mr. Jitin Dominic	B. Sc. (H) Computer Science Semester I	III	1000/-
10.	Mr. Sonu Gupta	B. Sc. (H) Computer Science Part III	II	1500/-
11.	Mr. Mandeep Karan	B. Sc. Applied Physical Sciences. Part III	II	1500/-

## **2. Scholarships and Awards**

The scholastic merit of the students in the College is recognized by the number of scholarships / fellowships that

they receive from various sources within the College as well as from external sources. This year too this tradition has been upheld.

*i. Science Meritorious Award*

Mr. Nishant Singla of B. Sc. (H) Physics Semester IV received this award, in the form of books worth Rs. 800/- from University of Delhi based on his performance in the University Examinations.

*ii. D. C. Arora Fellowship*

Following students have been awarded scholarships each worth Rs. 6,000/- as D.C. Arora Fellowship under the two categories mentioned below.

S. No.	Name	Course	Category
1.	Mr. Nishant Singla	B. Sc. (H) Physics Semester IV	Meritorious
2.	Mr. Rahul Kumar	B.Sc. Physical Science (Chemistry) Semester II	Meritorious
3.	Mr. Dharpal	B.Sc. Physical Science (Electronics) Semester II	Needy
4.	Ms. Shweta Arora	B. Sc. (H) Electronics Part III	Needy

*iii. Shri Sultan Chand Endowment Scholarship*

An endowment fund in the name of Shri. Sultan Chand, was started in the academic year 2010-11 and in the year 2011-12 this scholarship of Rs. 3500/- value has been awarded to Ms. Kanchan of B. Com. (H) - Part III.

*iv. Students Who Received Scholarships from Miscellaneous Sources.*

S. No.	Name	Course	Scholarship	Amountv (Rs.)
1.	Ms. Neha Sharma	M. Sc. Chemistry Semester IV	Indira Gandhi P.G. Scholarship for Single Girl Child (2010 - 2011)	20,000/-
2.	Ms. Afreen Nishan	B.Sc. (H) Zoology Semester IV	Post Matric Scholarship (Central) of Ministry of Minority Affairs, Govt. of India (2010-11)	4850/-
3.	Ms. Priyanka Gupta	B.Sc. (H) Computer Science Semester VI	Post Matric Scholarship (OBC), Haryana	1900/-
4.	Mr. Zaheer Khan	B. Sc. (H) Electronics Part III	Post Matric Scholarship, Govt. of NCT of Delhi	3000/-
5.	Ms. Laxmi Yadav	B. Sc. (H) Biomedical Sciences Part III	Merit Scholarship (OBC), Govt. of NCT of Delhi	4830/-
6.	Mr. Sanam Thakur	B.Sc. (H) Physics Part III	Board Scholarship, H.P. Board of School, Education, Dharamsala (Kangra) H.P.	4830/-

**3. Co-Curricular Activities - beyond the classroom**

The College adopted the by-line ***'beyond the classroom'*** a few years back and today it is not a mere rhetoric or an ornate phrase but a mission that continues to pay dividend to the student community of the college in so far as they

have been successful in breaking the shackles of classroom teaching and excelling themselves in various fields, as is evidenced in the following endeavours.

*i. Awakening India: Essay Competition on 150th Birth Anniversary Celebrations of Swami Vivekananda*

Following students participated in 'Awakening India' Essay Competition organized by Ramakrishna Mission New Delhi on the occasion of the 150th Birth Anniversary Celebrations of Swami Vivekananda in January 2012 and won a prize of Rs.500/- each.

S. No.	Name	Course
1.	Mr. Dhruv Goel	B. Sc. (H) Physics Semester IV
2.	Ms. Karishma Vashishtha	B. Sc. (H) Electronics Semester II
3.	Ms. Suad	B. Sc. (H) Biomedical Sciences Semester IV

Ms. Suad won a prize worth Rs. 5000/- in the final round of the Essay Competition held on 11 February 2012, at Ramakrishna Mission, New Delhi.

*ii. Quiz competition*

A team B. Sc. (H) Physics Semester IV consisting of Mr. Dhruv Goel and Mr. Harsh won third prize in the quiz competition held during February 23-24 2012 at Deshbandhu College, University of Delhi. This was a fiercely contested competition in which around eighty teams participated.

*iii. Dance Competition*

Mr. Rohit Chaudhary of B.Com. (H) Semester II bagged second prize in dance competition organized by Delhi College of Arts and Commerce, University of Delhi.

*iv. Debate Competition*

Mr. Pranay Moktan of B.Com. (H) Part III won first prize in Debate Competition organized by Delhi College of Arts and Commerce, University of Delhi.

*v. 4th Science Conclave*

To promote interest in Science and research among the youth, the Science Academies have been conducting Science Conclaves every year. This year we were able to send two young UG students – Megha Lal and Bimlesh Kumar Yadav, students of B.Sc. (H) Biomedical Sciences to attend the 4th Science Conclave, 2011, IIT Allahabad in the month of November 2011. For this we had to give permission to these students to give their house exams after they returned. They were fortunate to listen to talks by Nobel Laureates who presented their scientific work and provided an insight into the work already done in the specific areas in terms of research and development. At the conclave the students got opportunities to meet and discuss with thought leaders in science in the country as well as the Nobel laureates. Recognising that they were just UG students, the way these students interacted at the conclave was appreciated by many scientists.

**4. Student Aid**

The college has a policy where any student who is financially weak is assured financial help. For this we do have a student aid fund which gets donations from some teachers, non-teaching staff and well wishers.

*i. Student Aid Fund (SAF)*

The college supports a large number of students by providing various types of scholarships/aids through SAF in various

forms including full fee waiver, a stipend of Rs. 600 pm., aid from Book Bank, course fee for ECPDT programme, bus pass fare for ten months etc.

This year following students received SAF Awards.

S. No.	Name	Course	Assistance
1.	Mr. Amit Kumar	B. Sc. (H) Chemistry Part III	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
2.	Mr. Kaushal Kumar	B. Sc. (H) Physics Semester IV	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
3.	Ms. Nidhi Yadav	B. Sc. (H) Mathematics Part II	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
4.	Ms. Pinki Sharma	B. Sc. (H) Mathematics Part II	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
5.	Mr. Vicky Thakur	B.Sc. Physical Science (Computer Science) Semester II	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
6.	Mr. Raman Kumar Sinha	B. Sc. (H) Mathematics Part III	Full Fee Waiver and Stipend of Rs. 600/- p.m. for 10 months
7.	Ms. Anupama Kumari	B. Sc. (H) Biomedical Sciences Semester IV	Full Fee Waiver
8.	Mr. Chandan Kumar	B. Sc. Physical Science (Electronics) Semester II	Full Fee Waiver

9.	Mr. Ravi Kumar	B. Sc. (H) Chemistry Part III	Full Fee Waiver
10.	Ms. Abhilasha	B. Sc. Physical Science (Electronics) Semester IV	Full Fee Waiver
11.	Ms. Aashifa	B. Sc. (H) Zoology Semester II	Stipend of Rs.600/- pm. for 10 months and aid from Book Bank
12.	Ms. Gauri Nagpal	B. Sc. (H) Physics Semester IV	Stipend of Rs.600/-pm. for 10 months and aid from Book Bank
13.	Mr. Manish Kumar	B. Sc. (H) Physics Semester IV	Stipend of Rs.600/- pm. for 10 months
14.	Mr. D. Thangkhojang Haokip	B. Sc. (H) Zoology Semester IV	Stipend of Rs.600/- pm. for 10 months
15	Mr. Dharmendra Pali	B.Sc. Physical Science (Electronics) Semester II	Stipend of Rs.600/- pm. for 10 months
16.	Mr. Manish Kumar Jha	B.Sc. Life Science Part III	Stipend of Rs.600/- pm. for 10 months
17.	Mr. Vipendra Kumar	B. Sc. Life Science Part III	Stipend of Rs.600/- pm. for 10 months
18.	Mr. Vipin Kumar Gupta	B. Sc. (H) Physics Semester IV	Stipend of Rs.600/- pm. for 10 months
19.	Ms. Chhama Aggarwal	B. Sc. (H) Mathematics Part II	Stipend of Rs.600/- pm. for 10 months.
20.	Mr. Divyendu Kumar Jha	B.Sc. Life Science Semester IV	Stipend of Rs.600/-pm. for 10 months and Course fee for ECPDT course up to Rs.2500/-

21.	Mr. Nitish Kumar	B. Sc. (H) Electronics Part III	Stipend of Rs. 600/ p.m. for 10 months
22.	Ms. Astuti	B. Sc. (H) Zoology Part II	Aid from Book Bank and bus pass fare for 10 months
23.	Ms. Arti Malik	B. Sc. (H) Zoology Part III	Aid from Book Bank.
24.	Ms. Leena	B. Com. (H) Part II	Stipend of Rs.600/-pm. For 5 months and Aid from Book Bank.
25..	Mr. Amit Gangwar	B. Sc. (H) Physics Semester II	Aid from Book Bank.
26.	Mr. Animesh	B. Sc. (H) Biomedical Sciences Semester II	Aid from Book Bank.
27.	Mr. Jitendra Kumar Maurya	B. Sc. (H) Zoology Semester IV	Course Fee of ECPDT Course up to Rs.2500/-
28.	Mr. Chandan Kumar	B. Sc. Applied Physical Science Part III	Stipend of Rs.600/-pm. for 5 months.
29.	Mr. Shailender Singh	B. Sc. Computer Science Semester VI	Stipend of Rs.600/-pm. for 5 months.
30.	Mr. Jitender Kumar	B. Sc. (H) Mathematics Semester II	Stipend of Rs.600/-pm. for 5 months.
31.	Mr. Jai Shanker Jha	B.Sc.Life Sciences Part III	Stipend of Rs.600/-pm. for 5 months.



*ii. Ms. Teena Gupta Memorial scholarship*

In this category scholarships each worth Rs. 6000/- are awarded to needy and deserving students of B.Sc. (H) Electronics and B.Sc. Physical Science (Computer Science). This year following students were awarded.

S. No.	Name	Course
1.	Mr. Vicky Thakur	B.Sc. Physical Science (Computer Science) Semester II
2.	Mr. Rahul Pandey	B.Sc. Physical Science (Computer Science) Semester IV
3.	Mr. Brij Kishore	B.Sc. Physical Science (Computer Science) Semester IV
4.	Mr. Prabhav Pushkar	B.Sc. (H) Electronics Semester II
5.	Mr. Rajendra	B.Sc. (H) Electronics Semester IV
6.	Mr. Nitish Kumar Mallick	B.Sc. (H) Electronics Part III

Besides the above, under the pioneering **‘Earn-while-you-learn’** programme, students coming from a humble background are given an opportunity to fund their education. This is a small step on part of the college to take forward its vision of inclusive education.

**B. THE STUDENT COUNCIL**

College life is not just about class rooms and other sessions but a place where lessons of life are also to be learnt by the students. Today’s youngsters have to be groomed into tomorrow’s responsible citizens and leaders. Student Council of the College is a workshop for this, precisely. This year elections for the Student Council office bearers were

held on September 9, 2011 for the five posts of the council .  
Following are the new office bearers of the council.

S. No.	Name	Office Bearer
1.	Mr. Rahul Pandey	Mayor
2.	Ms. Payal Saluja	Deputy Mayor
3.	Mr. Kirti Negi	Council Treasurer
4.	Mr. Bornomoy Bhattacharya	Council Secretary
5.	Ms. Swati Makhija	Cultural Secretary
6.*	Ms. Phalguni Mathur	Student Executive College Complaints Committee
7.*	Mr. Vaibhav Aggrawal	Student Executive Career Counselling and Placement
8.*	Ms. Shweta	Student Executive Sports
9.*	Ms. Khairu Nisha	Student Executive Responsibilities and Grievances

\*The Student Executives at S. No. 7-9 were elected from among the class representatives for each course subsequently.

#### IV. ACHIEVEMENTS OF FACULTY

ANDC Faculty is constantly upgrading itself, which is reflected in the active participation in various conferences/ seminars/ workshops/ training programmes, either as learner or as a resource person. Beyond class room teaching, the faculty has been involved in authoring text books meant for school and college students. The expertise in their subject is further evident in many of them being on the editorial board and reviewing committees of publishing houses and International Journals. Some of the faculty has bagged prestigious awards and honours. Involvement of faculty

in all these activities has not only brought recognition to them in the college but has also resulted in highly improved teaching-learning process in the college.

The college faculty led by the Principal in front are very active in performing their academic duties besides leading an active life in research. This is borne out of the fact that there have been more than 10 contributions in the international forums in the last year despite the birth pangs involved in changing over to semester mode from annual mode.

**Dr. Savithri Singh, Principal**

Participated on invitation from the British Council, in the 'Going Global' 2012: International Educational Conference in London, UK, March 13 - 15, 2012.

Participated on invitation from the OER Foundation, in the 'International Network for Open Educational Resources (OERs) Anchor Partners Meeting' held in Dunedin, New Zealand, November 9 - 10, 2011.

Member, Reviewing Panel, Third International Conference on e-Learning, Universiti Teknologi MARA (UiTM), Malaysia, November 29 - 30, 2011.

Member – UGC Representative, Governing Body of Government Science College, Raipur, Chhattisgarh (2007-08 to 2012-13).

Participated in the UNESCO OER Platform meeting held in Hyderabad on June 28, 2011 on invitation from the UNESCO.

Invited as Resource Person to the Workshop on Open Educational Resources (OERs) by the National Institute of Open Schooling (NIOS) in Pune, February 29, 2012.

**INTERNATIONAL TRAVEL BY FACULTY FOR STUDY/SYMPOSIA/  
CONFERENCES/WORKSHOPS**

**Dr. Amit Garg**, Associate Professor, Department of Electronics. Chaired a technical session and presented two papers titled “Investigating material removal mechanisms during laser ablation of InSb” and “Polarization studies using Jones’ calculus in undergraduate optics laboratory” at the International Conference on Applications of Optics and Photonics (AOP’2011) held at University of Minho, Braga, Portugal, from May 3 – 7, 2011.

**Dr. Arijit Chowdhuri**, Assistant Professor, Department of Physics. Presented a paper titled “Detection of TATP precursor acetone at trace levels using rf sputtered SnO<sub>2</sub> thin film based sensors.” at SPIE Defence Security and Sensing Conference, Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Sensing XII”, held in Orlando, Florida, USA April 25 – 29, 2011.

**Dr. Gagan Dhawan**, Assistant Professor, Department of Biomedical Sciences. Was selected amongst many applicants for the Universitas 21 Award at University of Delhi and proceeded to successfully complete his Masters Degree in Bioinformatics from University of Edinburgh, UK.

**Dr. Ram Kumar**, Assistant Professor, Department of Zoology, Chaired a Technical Session on Workshop on Zooplankton identification, held in Guangzhou, China; July 2011. Chaired a Technical Session and presented a paper in International Conference on monitoring and management of degraded wetlands, held in Pattaya, Thailand August 2011

**Mr. Vishal Dhingra**, Assistant Professor, Department of Electronics. Presented two papers titled “Innovating spectrometry studies at undergraduate level using a linear CCD array” and “Laser based study of geometrical optics at school level,” at the Optical Engineering + Applications ( SPIE Optics + Photonics) Conference held in San Diego, California, USA from August 21 – 25, 2011.

**Dr. Udaibir Singh**, Assistant Professor, Department of Electronics. Presented a paper titled “Characterization of Palladium thin film deposited by pulsed laser deposition”, at the International Conference on Applications of Optics and Photonics (AOP’2011) held at University of Minho, Braga, Portugal, from May 3 – 7, 2011.

**Mr. V. Bhasker Raj**, Assistant Professor, Department of Physics. Presented a paper titled “Utilization of mass and elastic loading in SAW sensor for mustard gas stimulant” at International Conference on Key Engineering Materials (ICKEM), Singapore, February 26 – 28, 2012.

## BOOKS

Our teachers regularly contribute in the arena of school and general science education by authoring books.

### BOOKS PUBLISHED

S. No.	Title & Publisher	Author
1.	Learning modules in science for the students seeking lateral entry to Class VI-VIII, developed by NCERT	Dr. Sarita Kumar

2.	Tsunami Lahron Ka Kehar, Vidyarthi Prakashan	Dr. Amit Garg
3.	Maths Magic for class 6, Eduwell books	Mr. Chaman Singh
4.	Maths Magic for class 7, Eduwell books	Mr. Chaman Singh
5.	Maths Magic for class 8, Eduwell books	Mr. Chaman Singh
6.	Biodiversity, Biotechnology and Man: Interdependence and future challenges, Chapter 6: Bioactive compounds from soil Actinomycetes, page 92-108, Biotech Books	Monisha Khanna, Renu Solanki and Professor Rup Lal

#### BOOKS/JOURNALS REVIEWED

1.	Biginelli Reaction: A Green Perspective. Current Organic Chemistry,	Siva S. Panda, Dr. Pankaj Khanna and Leena Khanna
2.	'Quantum Mechanics' for Pearson Education	Dr. Sanjeeta Rani
3.	Reviewer in the International Journals - 'Pesticide, Biochemistry and Physiology', 'African Journal of Biotechnology', 'Acta Tropica', 'SOAJ of Entomological Studies', 'Journal of Medicinal Plants Research', 'African Journal of Agricultural Research' 'African Journal of Microbiology Research' and many others).	Dr. Sarita Kumar

The faculty in the college believes that one needs to get constant exposure to newer areas and also feel that lot of learning can take place through workshops/training programmes etc. Hence, frequently depending on need these are organized.

**TRAINING PROGRAMMES/WORKSHOPS ORGANIZED**

S. No	Details	Organizers	Dates
1.	Thin Films and their Applications, organized by ANDC SPIE chapter	Dr. Amit Garg (Convenor)	24 - 25 Feb, 2012
2.	Molecular Phylogenetics: Understanding Evolutionary Histories, organized by ANDC.	Dr. Monisha Khanna (Convenor) Dr. Ravi Toteja, Dr. Seema Makhija	15 - 16 Jun, 2011
3.	Nanostructured Ceramics and Nanomaterials, held at Convention Centre, University of Delhi	Dr. Pankaj Tyagi (Co-Convenor)	13 -16 Mar, 2012
4.	Workshop on Evolutionary Perspectives in Modern Biological Teaching and Research, held at ILL, University of Delhi	Dr. Savithri Singh (Convenor) Dr. Sarita Kumar	9 - 10 May, 2011
5.	e-Content development in 'Economics' and Soft Skills, workshop for the faculty of Mumbai University held at ANDC	Dr. Savithri Singh (Convenor & Resource Person) Dr. Sarita Kumar, Dr. Neeti Misra, Dr. Ravi Toteja (Resource Persons)	29 Nov - 02 Dec, 2011
6.	Teaching Redefined: Open Access to Education, sponsored by INASP, UK, held at ANDC.	Dr. Sarita Kumar (Convenor) Dr. Ravi Toteja Dr. Manisha Jain Dr. Rajesh Chaudhary	01 Nov, 2011

7.	International Workshop on Stellar Spectral Libraries (IWSSL-2011), held at University of Delhi in association with IUCAA-Pune, DST, New Delhi and Indian Astronomical Union.	Dr. Subhash Kumar Dr. Sukanta Deb	5 - 9 Dec, 2011
8.	Molecular Phylogenetics: Understanding Evolutionary Histories, organized by ANDC	Dr. Monisha Khanna (Resource Person)	15-16 Jun, 2011
9.	Summer Training Workshop for students on "Isolation of antimicrobial compounds from soil actinomycetes"	Dr. Monisha Khanna (Co-ordinator & Resource Person)	22 Jun-19 Jul, 2011
10.	Experimental Procedures of Cell and Molecular Biology for Botany Teachers held at ANDC.	Dr. Monisha Khanna, Dr. Ravi Toteja, Dr. Seema Makhija (Co-ordinators & Resource Person)	9 Sep, 2011
11.	Workshop on Use of software to create Chemistry Document for chemistry students	Dr. Neeti Misra Dr. Pankaj Khanna	6-7 Jun, 2011
12.	Workshop on Zooplankton identification, held in Guangzhou, China	Dr. Ram Kumar (Resource Person)	Jul, 2011
13.	'OER Workshop' held at Institute of Distance and Open Learning, University of Mumbai	Dr. Savithri Singh, Dr. Ravi Toteja, Dr. Neeti Misra	17-20 Oct, 2011



**CONFERENCES / SEMINARS / WORKSHOPS ATTENDED**

1.	3rd International Exhibition and Conference on Scientific, Biotechnology, Analytical and Lab Technology, India Lab Expo 2011, Pragati Maidan, New Delhi	Dr. Sunita Hooda	8-9 Dec, 2011
2.	Training workshop on "Green Chemistry: Chemistry for Tomorrow's World", Organized by Green Chemistry Network Centre, Department of Chemistry, University of Delhi in collaboration with Vigyan Prasar, DST, Govt of India	Dr. Sunita Hooda Dr. Manisha Jain	26 Dec, 2011
3.	Training Program in C and C++ Programming Language organized by Department of Physics and Astrophysics, University of Delhi	Dr. Sanjeeta Rani	8-15 Jun, 2011
4.	International Satellite Seminar of Role of Mathematics in Science and Engineering, Organized by Graphic Era University, Dehradun, UK, India	Mr. Sadanand	13-14 May, 2011
5.	Workshop on Managing Bibliography with EndNote organized by School of Biological Sciences, University of Edinburgh, UK	Dr. Gagan Dhawan	22 Apr, 2011

6.	Workshop on Biomolecular interactions using label-free techniques, organized by School of Biological Sciences, University of Edinburgh, UK	Dr. Gagan Dhawan	17 Mar, 2011
7.	NextGenBUG meeting at National e-Science Center, University of Edinburgh, UK	Dr. Gagan Dhawan	14 Mar, 2011
8.	Workshop on Project Planning organized by School of Biological Sciences, University of Edinburgh, UK	Dr. Gagan Dhawan	11 Feb, 2011
9.	Workshop on Scientific Writing organized by School of Biological Sciences, University of Edinburgh, UK	Dr. Gagan Dhawan	9 Nov, 2011
10.	Workshop on Effective Presentations organized by School of Biological Sciences, University of Edinburgh, UK	Dr. Gagan Dhawan	2 Nov, 2011
11.	Workshop on Computational Chemistry for Chemistry Educators organized by Miranda House	Dr. Neeti Misra	23-24 Nov, 2011
12.	Workshop on quality higher education held in Patna	Dr. Ram Kumar	Nov, 2011
13.	Participated in Resource generation camp for chemistry organized by Homi Bhabha Centre for Science and Education (HBCSE), Mumbai	Dr. Neeti Misra	14-18 Sep, 2011

**AWARDS /HONOURS**

<b>S. No.</b>	<b>Awardee Name</b>	<b>Name of the award/ honour</b>	<b>Awarded/ honoured by</b>	<b>Awarded on</b>
1.	Dr. Sarita Kumar	Meritorious Teacher Award	Directorate of Higher Education, Govt. of NCT of Delhi	10 May, 2011
2.	Dr. Sarita Kumar	Shiksha Rattan Puraskar	India International Friendship Society	12 Oct, 2011
3.	Dr. Sarita Kumar	Selected as one of the 'Open Access Competition Winners' amongst the ten worldwide to celebrate the Open Access Week	International Network for the Availability of Scientific Publications (INASP), United Kingdom	
4.	Dr. Gagan Dhawan	Universitas 21 Award to do masters degree in Bioinformatics (Degree Awarded)	University of Edinburgh, UK under University of Delhi Faculty Training Program	Nov, 2011
5.	Dr. Pankaj Tyagi	'Fellow in Physics' for a period of one year	ILLL, University of Delhi	

## OTHER ACHIEVEMENTS

1.	National level test for students, "ACT-IYC Concept Test in Chemistry", held at ANDC	Dr. Pankaj Khanna Centre Head	17 Dec, 2011
2.	Acted as a Jury Member for the assessment of the prestigious INSPIRE scholarship organized by DST, New Delhi held at Pragati Maidan, New Delhi.	Dr Pankaj Khanna	14-16 Aug, 2011
3.	Session chair at International Conference on Applications of Optics and Photonics, Braga, Portugal	Dr. Amit Garg	3-7 May, 2011
4.	Member, Advisory Committee, Conference on Convergence of Optics and Electronics, COE 2011, Joint Conference organized by SPIE chapters of JIS College of Engineering and University of Calcutta, Science City, Kolkata, India	Dr. Amit Garg	26 – 27 March, 2011
5.	Invited to a discussion on R and D collaboration between India, New South Wales (NSW) and University of Wollongong (UoW), Australia in New Delhi	Dr. Urmi Bajpai	7 Dec, 2011
6.	'Expression of the potential drug target proteins of <i>Mycobacterium tuberculosis</i> ' in OSDD foundation day meeting held at CSIR headquarters	Dr. Urmi Bajpai	15 - 17 Sep, 2011

7.	International conference on monitoring and management of degraded wetlands held in Pattaya , Thailand (chaired a session)	Dr. Ram Kumar	Aug, 2011
8.	Visiting Faculty, Laboratoire de Chimie des Polymères Organiques (LCPO), University of Bordeaux, France	Dr. Gagan Dhawan	Aug, 2011
9.	Member of Editorial Board of International Journals, Journal of Applied and Natural Sciences, Asia Pacific Journal of Tropical Biomedicine	Dr. Sarita Kumar	
10.	Associate editor of the International Journal, International Research Journal of Microbiology	Dr. Sarita Kumar	
11.	Invited as an expert for resource generation and paper setting of Chemistry Olympiad, HBCSE, Mumbai	Dr. Neeti Misra	26-27 Sep, 2011

### FACULTY AWARDED WITH Ph. D DEGREE IN THE YEAR 2011-12

S. No.	Name	Title	Awarding University/ Institute
1.	Dr. Subhash Kumar	Waves and Instabilities in Relativistic and Non-relativistic Plasmas	DU
2.	Dr. Ranjeet Singh	Parametric Instabilities in Short Pulse Laser Produced Plasmas	IITD

3.	Dr. Gagan Dhawan	Novel Methods for the synthesis of Oligonucleotides and their modified analogs	DU
4.	Dr. Rajneesh Kumar Verma	Studies on Surface Plasmon Resonance Based fibre Optic Sensors with Different Probe designs.	IITD
5.	Dr. Sukanta Deb	Study of Light Curves of Some Variable Stars	DU
6*.	Mr. Sandeep Kumar Goel	Financial Performance of Commercial Banks in India in Post Reforms Era* (Thesis submitted on Nov, 2011)	Jamia Millia Islamia University, Delhi

The College is a facilitator in the value-addition to the academic profile of its faculty. It provides study leaves/duty leaves to its teachers for pursuing Ph. D. degree/Post-Doctoral studies. In the current academic year study leave was sanctioned to the following teachers

S. No.	Name	Course of Study	University
1.	Ms. Harita Mehta	Ph. D.	Department of Computer Science, University of Delhi
2.	Ms. Surinder Kaur	Ph. D.	Faculty of Management Studies, University of Delhi
3.	Ms. Preeti Marwaha	Ph. D.	Department of Computer Science, University of Delhi
4.	Ms. Sunita Jetly	Ph. D.	B.R. Ambedkar Centre for Biomedical Research, University of Delhi
5.	Ms. Shalu Mahajan	Ph. D.	Faculty of Management Studies, University of Delhi

The college in its constant endeavour to provide in-service upgradation of knowledge skills for the faculty members strongly believes making available opportunities for them to attend various Orientation and Refresher Courses and the following attended the same:

S. No.	Name	Department	Course	Date
1.	Mr. Ravinder Sagar	Zoology	Refresher	15-02-2011 to 09-03-2011
2.	Dr. Archana Pandey	Biomedical Science	Refresher	15-02-2011 to 09-03-2011
3.	Mr. Yasheshwar	Botany	Refresher	23-03-2011 to 11-04-2011
4.	Dr. Monica Misra	Zoology	Refresher	04-04-2011 to 20-04-2011
5.	Mr. Sadanand	Mathematics	Refresher	13-07-2011 to 06-08-2011
6.	Mr. Chaman	Mathematics	Refresher	13-07-2011 to 06-08-2011
7.	Dr. Archana Pandey	Biomedical Science	Refresher	12-12-2011 to 31-12-2011
8.	Dr. Udaibir Singh	Electronics	Orientation	08-11-2011 to 02-12-2011
9.	Dr. Ravneet Kaur	Electronics	Orientation	08-11-2011 to 02-12-2011

#### **ACHIEVEMENTS OF NON-TEACHING STAFF**

With students and faculty setting high standards with academic and other achievements can the staff of the college be far behind? The following cases point to all round accomplishments by non-teaching staff during the last year.

1. Mr. V. S. Rao erstwhile Section Officer of the college administration got appointed as Administrative Officer of the college with effect from 28 February 2012.

2. Mr. Rakesh Kumar Dubey has been pursuing Masters in Physics from Jamia Milia Islamia University, Delhi. He is currently on study leave from the College.

## V. WORKSHOPS / SYMPOSIUMS

Each year the calendar of ANDC used to be full of events and megaevents organized in the form of workshops, symposiums, lectures, society activities. But with the introduction of the semester scheme in the University, adjusting to the new academic deadlines have taken precedence over other activities. Despite these constraints, the college could organize following activities this session:

### A. WORKSHOP: 'EVOLUTIONARY PERSPECTIVES IN MODERN BIOLOGICAL TEACHING AND RESEARCH'

The Principal, Dr. Savithri Singh and the Director, ILLL, Professor M M Chaturvedi had gone to HBCSE for meetings, and were able to attend a workshop on Evolution being conducted there by Professor Manda C Jost, a Fullbright Fellow from New Mexico University. Within an hour of attending the workshop we decided that the workshops should be conducted in Delhi.

Acharya Narendra Dev College in collaboration with Institute of Life Long Learning (ILLL) and Centre for Science Education & Communication (CSEC), University of Delhi organized a two-day National Workshop on May 9-10, 2011 at ILLL, North Campus, University of Delhi.



The workshop was aimed to examine the concepts in evolution *e.g.* evolutionary history, evolutionary process and phylogenetic trees. Though we had planned for only about 75 participants we got a total of one hundred sixty participants attending from universities across India.

The workshop started with the keynote address of Professor Manda Clair Jost, Associate Professor Biology, Department of Natural Sciences, Western New Mexico University. She enthralled the gathering with her talk on '*Role and value of evolutionary perspectives in modern biological teaching and research*' which was followed by interesting activities simulating the concepts of evolution. It gave a hands-on experience of evolutionary concepts to all the participants in a very lucid manner.

The first session of the workshop began with the talk of R. Geeta, Professor, Department of Botany, University of Delhi. Her talk '*How did we come to understand evolution? Some history*' elucidated the concepts of phylogeny. The talk was followed by activities and exercises on phylogeny which helped the participants to comprehend the phylogenetic processes.

Subsequently, Dr. Mallikarjun Shakarad, Professor, Department of Zoology, spoke on the '*Role of selection in evolution*'. With the help of the examples of insects, He explained why and how the selection of some species in the nature leads to evolution. This was followed by a talk from Professor V. Nanjundiah, Professor, Indian Institute of Science, Bangalore on '*An introduction to evolutionary thinking*'. He explained multicellular development and pattern formation in cellular slime mould, *Dictyostelium discoideum* and related the concept to evolutionary approach.

Thereafter, Dr. Seema Makhija, Associate Professor, Acharya Narendra Dev College, addressed the gathering on '*Teaching and learning evolution: A challenge*'. She discussed various problems faced by teachers and students in studying and understanding the concepts of evolution.

Second session was dedicated to the presentations by postgraduate and research students. A total of five students from different institutes, Mr. Debadityo Sinha, BHU, Varanasi, Ms. Radhika Warikoo, Acharya Narendra Dev College, Mr. Satosh Kumar, SGTB Khalsa College, Ms. Eapsa Berry, Department of Botany, University of Delhi and Mr. Raghav Saraswat, TERI University presented their thoughts and understanding about different concepts of evolution. Their presentations were greatly appreciated by the participants and Mr. Santosh Kumar, SGTB Khalsa College won the first prize.

In the first session of second day, the workshop started with the talk of Professor G.V.R. Prasad, Professor, Department of Geology. His talk '*Evolution and the fossil record*' discussed the concepts of fossilization and the records available. He elucidated how these records are helpful in understanding evolution of organisms. Thereafter Dr. Anju Jain, Associate Professor, Daulat Ram College, University of Delhi delivered a talk on '*We need revolution in teaching evolution*'. She emphasised on the need to support the theoretical teaching with models and exercises.

Second session started with the talk of Professor K. N. Ganeshiah, Professor, University of Agricultural Sciences, Bengaluru. He addressed the gathering on the topic '*Evolution of Mutualism*' where he discussed various

examples of co-operative behaviour and inter-relationships between organisms and their evolutionary path. Thereafter, Professor R. Geeta addressed the gathering on 'Putting theory to practice – the origin and diversification of land plants' which was followed by a hands-on session on evolutionary exercises.

In the end, Professor Manda Clair Jost addressed the gathering on '*The discipline of systematic and evolution of new gene functions*'. She emphasised that there is a need to encourage participants to speculate and philosophize on all of the possible fringe and tangent concepts that can even be vaguely related to evolutionary biology and provide quality education and training in the area.

## **B. NATIONAL SEMINAR: 'TEACHING REDEFINED: OPEN ACCESS TO EDUCATION'**

Acharya Narendra Dev College was one among ten institutions awarded a small grant by 'INASP - International Network for Availability of Scientific Publications' to celebrate 'Open Access Week'. As a part of the celebration, the college organized a national seminar on 'Teaching Redefined: Open Access to Education' on November 1, 2011. The seminar was aimed to spread awareness about the importance of 'open access to learning opportunities' by sharing knowledge and resources. An effort was made to expose more and more teachers, research scholars and others to the field of 'Open Education'. The seminar was attended by about forty five participants from ten different institutions across University of Delhi. In her opening remarks, Dr. Savithri Singh, the Principal discussed the significance of Open Access and need

of organizing such a seminar in today's scenario.

The talks delivered by eminent speakers focussed upon a broad spectrum of topics encompassing from 'Open Access from Academician's Perspective', 'Open Source Soft Skills', 'OERs', 'Licensing on Educational Material' to 'Copyright/Copyleft' and 'Creative Commons'. Dr. Zakir Thomas, Project Director, Open Source Drug Discovery (OSDD), CSIR, New Delhi, elucidated the concept of open access and its importance in drug discovery project started by CSIR for the benefit of human health. Professor G. Nagarjuna, Homi Bhabha Centre for Science Education (HBCSE), Tata Institute of Fundamental Research (TIFR), Mumbai, India delivered a talk titled 'What, Why and How Questions on Open Access' wherein he introduced the ideology of open access, based on the fact that the structure of knowledge could be better described in terms of a network. He also informed about knowledge networking, collaborative portal ([www.gnowledge.org](http://www.gnowledge.org)) and 'Gnowledge Laboratory' developed by them to produce a surface map of knowledge using dependency relations. Dr. A. Ratnakar, Information and Education Consultant, Informatics India Pvt. Ltd., New Delhi, spoke on the topic 'Access to Open Access Sources'. He informed the participants about how educational material available online can be accessed freely and provided a list of various such resources. An old favourite in the college, Ms. Anandana Kapur, Independent Media Practitioner spoke on 'A for Access, A for All'. She threw light on the role of open access applications in day to day life gadgets e.g. mobile phones, laptops etc. and use of modern technology in teaching.

### **C. WORKSHOP: 'HANDS ON TRAINING MOLECULAR PHYLOGENETICS: UNDERSTANDING EVOLUTIONARY HISTORIES'**

A two-day workshop for students on 'Hands on Training Molecular Phylogenetics: Understanding Evolutionary Histories' was organized by Department of Zoology during June 14- 15, 2011. The resource person of the workshop was Dr. Manda Clair Jost, Associate Professor at Western New Mexico University. This workshop addressed to various prevailing misconceptions about evolution and provided a better understanding. The participants were acquainted with the emerging trends and applications of molecular phylogenetics. Hands on training sessions on Molecular Phylogenetics i.e. construction of phylogenetic trees and bioinformatics tools were also conducted. The students compiled information to understand evolutionary relation of various species based on deciphered phylogenetic tree.

### **D. WORKSHOP: 'EXPERIMENTAL PROCEDURES OF CELL AND MOLECULAR BIOLOGY'**

A one-day Workshop for teachers on 'Experimental Procedures of Cell and Molecular Biology' was organized by Department of Zoology on September 9, 2011, wherein teachers got hands on experience of various cytochemical techniques. The coordinators of this workshop were Dr. Monisha Khanna, Dr. Seema Makhija and Dr. Ravi Toteja.

### **E. PHOTOGRAPHY WORKSHOPS**

The college held two photography workshops for the staff and students during October 21–21, 2011 and December

2-3, 2011 in collaboration with Centre for Advancement of Public Understanding of Science and Technology (CAPUST). The resource person was renowned nature photographer Ms. Rathika Ramasamy. The workshop entailed theoretical aspects along with hands-on sessions with emphasis on animal photography. The field work included visits to Biodiversity Park, and National Zoological Park wherein Ms. Rathika explained basics, technical and aesthetic aspects of nature photography. The workshops elucidated the need to understand the nitty-gritty of photography rather than possessing high-end cameras. Forty participants gained from this workshop.

## VI. COLLEGE ACTIVITIES

The activities in the college are organised through Departmental Societies and Staff Council Committees. The Departmental societies of course, deal with activities restricted to the subject while the committees work across all subjects and courses.

### A. STAFF COUNCIL COMMITTEES

#### 1. Dramatics Society

'Dhwani', the college's Dramatic Society organised a theatrical production 'Ye Daagh Daagh Ujaala' on February 3, 2012 at Sri Ram Centre, New Delhi. This production, the second in series after formal inauguration with 'Sau Mein Laga Dhaga' last year. The play written by the noted playwright Mr. Anis Azmi, designed and directed by Mr. Ajay Manchanda was an attempt to depict the sacrifices made by our freedom fighters

to get independence for the country. It went on to show how over-time their efforts had got negated and vision diluted by the various social evils like corruption, dowry, female foeticide, sexual harassment and the likes which continue to plague our society. The play tried to portray the extent to which our society had degenerated and moved away from what our freedom struggle stood for and the values that it epitomized.

Honourable Minister of Woman and Child Welfare in the Government of N.C.T. of Delhi, Professor Kiran Walia was the guest of honour. She congratulated the students, director, compere and writer for such a commendable performance. The play was widely covered by media and various newspapers.

## **2. National Social Service (NSS)**

The NSS unit of the college is one of the most important pillars of its social outreach programme. As has been the case for the previous many years, this year too the N.S.S. unit of Acharya Narendra Dev College continued to work hard to inculcate the spirit of self-less commitment and volunteerism amongst the students.

In the present academic year 2011-12 society had as many as six hundred enrollments which surely indicates how appealing it is to the students of the college. NSS started off with elections taking place in the month of August, 2011 for different posts. NSS day was celebrated on September 24, 2011 and to mark the occasion, debate and painting competitions were held . The results of the competition were as follows.

- **Debate:** A debate on 'Increase in living standards has lead to decrease in moral values' was held as part of NSS activities.

**First Prize :** Phalguni Mathur, B.Sc. (H) Physics Part III

**Second Prize:** Mandeep Kaur, B.Sc. (H) Botany Part II  
Anuradha Sethi, B.Com. (H) Part II

- **Painting:** A painting/poster making competition was held on the theme 'Anti Smoking' in which the college saw large participation from students across all courses. The first prize was given to Raman Maharana (B.Com.(H) Part II). What makes us happy is that Raman went on to win the first prize in the University level poster making competition organised by the NSS, DU. His poster is on the cover of the booklet brought out by NSS, DU.

- **Diwali Mela 'SAHYOG':** As usual, the Diwali Mela "SAHYOG" was organized on October 21, 2011 where the college invited various NGOs working for differently abled people to sell the products produced by them such as candles, decorative materials, handmade products, diyas and various stationary items. It allows the college to play its role in making the Diwali of these less-privileged people memorable and more enjoyable. The mela was highly successful in so far as all their items were quickly sold by the noon. Students and teachers came in full force to support the noble cause. All the NGOs expressed thanks to students and staff members and their willingness to be the part of such events in the future also. A record sum of Rs 25,000 was collected, an endearing milestone for a noble cause.



- 7 **Working with Goonj** : On the initiative of the principal, NSS unit has established ties with 'GOONJ', an NGO working to provide basic necessities like clothes, food, sanitary items etc. to the poor and underprivileged in urban as well as rural areas throughout India. The NSS volunteers of the college visit their centre regularly to hand over generous donations of clothes, books and stationary items collected from the college students, teachers and staff.
- 7 **Blood Donation Camp**: A blood donation camp was organized on March 24, 2011 which witnessed great enthusiasm and support among students as well as teachers to donate blood. Thus, the college NSS unit lived upto its motto "NOT ME BUT YOU", supporting wonderful causes and making a contribution to the society. All this surely would not have been possible without the guidance of the NSS Convenor Mr. Sadanand Prasad who encouraged the students to do such wonderful work.

### 3. Sports Committee

Building upon the success of the previous year, the sports committee of the college with enthusiastic response of the students managed to take sports to a new high. The first step in this direction was taken when three coaches for football, volleyball and cricket were appointed to give students a quality training.

This year the college sent teams for the following sports to various University of Delhi and National tournaments in the months of October-December, 2011.

- Football (Men)
- Cricket (Men)
- Volleyball (Men and Women)
- Athletics (Men and Women)
- Boxing (Men)
- Cross country (Women)
- Badminton (Women)

To a great delight for everyone, the college cricket team won a match for the first time.

Keeping the trend initiated in the previous year, 'Sports Week' was celebrated during September 21-30, 2011 this year too, with the continued support of our primary sponsors Adidas. The intra-college sports meet was organized during this period which recorded mammoth participation from over six hundred participants from twelve different courses in eight different sport events. The details for the same are given below:

S . No.	Tournament	No. of Participants (Teams/Players)
1.	Cricket (Men)	12
2.	Football (Men)	08
3.	Volleyball (Men)	06
4.	Badminton (Men Single)	17
	Badminton (Men Double)	11
	Badminton (Women Single)	16
	Badminton (Women Double)	06
	Badminton (Mix Double)	09

5.	Chess (Men)	15
	Chess (Women)	04
6.	Carrom (Men)	06
	Carrom (Women)	05
7.	Athletics (Men)100m	12
	Athletics (Men) 800m	11
	Athletics (Men) Long Jump	12
	Athletics (Men) Shot Put	07
	Athletics (Men) Relay 100x4	09
	Athletics (Women)100m	12
	Athletics (Women) 800m	04
	Athletics (Women) Long Jump	04
	Athletics (Women) Shot Put	04
	Athletics (Women) Relay 100x4	06

Sports events for college staff were also organized on September 29-30, 2011 in following categories:

- ↗ Badminton (Single)
- ↗ Table Tennis (Single)
- ↗ Chess
- ↗ Carrom (Single)
- ↗ Athletics (100m Race & 800m Walk)
- ↗ Cricket Match (Teaching v/s Non-Teaching)

The whole week of fun and frolic with a host of above activities for students and teachers in association with Adidas ended with celebration of Annual sports day on October 12, 2011.

Annual Sports Day began with 'March Past' under the flag of twelve different courses. The occasion was graced by the chief guest, Mr Amit Khanna, 'The Fastest Man in India', five

times National Champion and former 100m National Record Holder. The day was rounded up by the prize distribution ceremony for all the winners and runners-up where certificates and Adidas T-Shirts for all the distinguished athletes were distributed.

Continuing with the good news in the field of sports, the college has also started an intra- college Volleyball and Football League, with matches being organized every Saturday wherein all the departmental teams are participating in a round robin league format tournament.

#### **4. Annual Events Committee**

The Annual Events Committee is responsible for all activities that are held at the college level which includes the Orientation programmes, freshers and farewell parties, college festival, annual day, and Acharya Narendra Dev memorial lecture.

##### **➤ Annual Day**

The Annual function of the College was held on 7th April, 2011. Professor Vivek Suneja , Pro Vice Chancellor, Delhi University graced the occasion as the chief guest while Professor Umesh Rai, Director South Campus was the Guest of Honor. The function started with a captivating dance recital by a student Swati Muralidharan of B.Com (H) II year followed by lamp lighting ceremony. After this, Dr. Monica Mishra, secretary staff council, welcomed the esteemed guests, staff and the students of the College. Dr. Savithri Singh, Principal, presented the annual report of the college highlighting the achievements of the college in various fields e.g. improvement of infrastructure research projects, and the laurels won by the College in the year gone by to name a few. She also talked about the achievements of students and

teachers in the various projects they have been working on, their publications in journals of national and international repute, organizing international and national conferences etc. The chief guest was so impressed with the ongoing research work and the laboratories of the college that he announced that Acharya Narendra Dev College could be a prospective centre for the proposed Central Instrumentation Facility (CIF), which University was planning to start in one or two colleges in South Campus. Director South Campus too motivated both students & teachers alike to work hard and do their respective jobs efficiently. Shri B.P.Singh, Chairman of the governing body of the College congratulated the students, principal, teaching and non-teaching staff of the college for achievements of the College in academics and extracurricular activities. Professor Suneja also gave away prizes to the meritorious students of the college. 'Dhwani', the Dramatics society of the college presented Nukkad Natak addressing various aspects of college life which was enjoyed by all. The function ended with a vote of thanks by the Convenor Annual Events committee, Dr. Charu Khosla Gupta.

### ➤ **OPEN DAY**

Open Day was organized by the College on June 9, 2011 to acquaint the prospective students with various courses offered by the College, the cut-offs, the library, and many different activities of various societies in the college. More than 100 students and their parents attended the session which began with a presentation about the College, followed by a brief interaction with the Principal, Admission Convenors, the Teachers-in-charge, the Society Convenors and other teachers.

### ➤ **Orientation Day**

The college also organizes 'Orientation Days' at the start of the session each year. This is to welcome the fresh batch of the students to the College and to familiarize them with the college, faculty, rules and regulations, various programmes and facilities available. All freshers were expected to attend and teaching schedules were made available to them. This year the Orientation days were spread over two days on 19th- 20th of July 2011.

### ➤ **Acharya Narendra Dev Memorial Lecture**

Acharya Narendra Dev was a great patriot and educationist, whom Pandit Jawaharlal Nehru has rightly described as a person rare in mind, spirit and intellect. Every year, the college celebrates the birth anniversary of this great man of rare distinction. This year too a lecture was organized on November 2, 2011 in the college. Dr. Ranjana Kumari, Founder and Director of Centre for Social Research was the eminent speaker. Dr. Kumari is a prominent activist and a leading force in women's movement in India. She spoke on "Gender Inequality: Challenges of making an Equitable Society". She discussed about the plight of women in India and the inequality they generally experience. She spoke about female foeticide, women trafficking and thus laid emphasis on women empowerment. The lecture was followed by an active discussion and was appreciated by one and all.

### ➤ **ACCENTURE - The Annual Cultural Festival**

Accenture, the annual festival of the college is organized every year with great enthusiasm by the students and teachers alike. The event encompasses two days of absolute fun and joy for

the students who not only run and manage the show but also get the opportunity to show-case their innate talent and skills. Organizing an event of this mega proportion involves a lot of planning, hard work and rehearsal. This not only promotes the spirit of healthy competition amongst students but also inculcates a sense of self-belief besides enhancing their organizational skills that may help them in future life.

This year Accenture' 12 was held on January 19-20th 2012 and during these two days the college wore a festive look decorated as it was with paper balls, stars, rangoli and balloons. The spirit of youth was flowing everywhere and following everyone. There were stalls offering interesting games, souvenirs and mouth watering snacks which sold like hot cakes. With more than abundant sponsorships flowing in from corporates like Videocon, Punjab National Bank, State bank of Patiala and other co-sponsors, the festival was a well organized one.

The inauguration was followed by a wonderful dance performance by a student of the college. Over the two days the students participated enthusiastically in Debate, Pot painting, Hasya Kavita and Fashion show. Events like Music and Dance competition saw lot of participation from students of other institutions as well. "Antakshari" was a big hit with teachers also participating in it. This year for the first time, Band Competition was also organized and had several Bands from Delhi University as well as other Universities. The students of the College presented a street play.

The festival culminated with a DJ evening where the students got a chance to let their hair down and dance away their blues. All in all, the event was a huge success.

## **5. SPICMACAY - ANDC Chapter**

The Society for the Promotion of Indian Classical Music amongst Youth (SPICMACAY) is a non-profit organization dedicated to promoting awareness about traditional Indian music and culture among the student community. SPICMACAY, Acharya Narendra Dev College Chapter is an active chapter which seeks to conserve and promote an awareness of the rich and diverse cultural tapestry of India through a focus on the classical arts with their attendant legends, rituals, mythology and philosophy. The chapter endeavours to organize various events every semester with the active involvement of the students in the furtherance of the above objective. The ANDC chapter participated in the ongoing Virasat-2011 series of SPICMACAY, which was dedicated this year to Ustad Rahim Fahimuddin Dagar, Pt. Bhimsen Joshi, Sh. M. F. Hussain, Ustad Asad Ali Khan, Sh. Mani Kaul, Sh. Badal Sircar and Ustad Mehmood Dholpuri.

On October 14, 2011, the ANDC Chapter of SPICMACAY organized a movie screening of Charlie Chaplin's classic "Modern Times" in the conference room of the College. The screening of this movie was interspersed with laughter, awe and appreciation of the cinematic excellence of the legendary Charlie Chaplin who depicted the common man's view of the industrial revolution in Britain.

The classical music concert of the ANDC-Virast 2011, was organized on October 19, 2011. It featured the renowned Hindustani Vocalist duo of Ustad Mazhar Ali Khan and Ustad Jawad Ali Khan, the grandsons of the Ustad Badeghulam Ali Khan the doyen of Patiala Gharana and one of this century's greatest vocalists. This concert evoked a great response from



the college community as the venue was jam-packed much before it started. The concert started with paying tribute to the Ghazal maestro Sh. Jagjit Singh, who passed away just a few days before this concert. Thereafter, the audience were treated with one of the greatest exposition of Hindustani vocals by the duo of Ustad Mazhar Ali Khan and Ustad Jawad Ali Khan. Beginning with subah ki todi... in raag Janunpuri , the duo mesmerized the audience by performing various bandishes in raag Desi, raag Goojri, raag Rageshwari etc. The duo also kept on educating the gathering about the finer points of the classical music and their significance in the indian context. On popular demand of the students the duo also sang their popular thumeries like ..padharo mhare desh... and yaad piya ki... which left the audience unsatiated for more classical music. All these events were beautifully sewn in a thread by the anchor Dr. Rajneesh Kumar Verma. At the end of the concert the students interacted with the Ustad duo and were enthused about the Indian classical music.

## **6. Alumni Affairs**

The alumni affairs committee kept its date with its yearly schedule of the first sunday of February and organized the alumni meet cum get-together on February 5, 2012 in the lawns of the College. It was a very well attended event, growing in size and participation with each passing year. The primary objective of the alumni meet was to make the alumni an integral part of the growth of the institution. The meet underlined the significance of enhanced student- faculty-alumni interaction and deliberated upon evolving strategies to strengthen the outreach activities of the college. The meet

involved bringing together of many people associated with college at one place, and provide opportunities to renew and make new contacts. The event was inaugurated by lighting of lamp followed by Principal's address to the gathering. The alumni was pleasantly surprised to see the progress of the college in terms of its academic achievements and infrastructure. Some of the alumni members reminisced about their stay in the alma-mater and how college life had played an important role in shaping their careers, besides opining about their corporate life and skills required to make a successful career. The valuable suggestions on the future prospects and priorities were cheerfully appreciated by the august gathering in this meet. A number of games and fun activities were also organised on this occasion. The meet ended with a vote of thanks by the Convenor.

### **7. Editorial Committee**

This committee is responsible for all the publications the college brings out throughout the year. The ones that we deem very important are the prospectus, the annual report and the college magazine 'Insight'. Over the last few years we have worked hard at improving the print quality as well as content in the publications. Often, even before anybody comes to the college it is the publications that they see. As we all know 'first impressions are last impressions', recognizing this we make special efforts while designing - the prospectus particularly. We also ensure that the content is comprehensive and it does show case the college for what it is. Our prospectus of last year was highly appreciated.

The magazine of course, tries to showcase the efforts of the students. The last year's magazine was released on

the Annual Day of the college by Professor Vivek Suneja, Pro-Vice Chancellor, University of Delhi and Professor Umesh Rai, Director, UDSC. We prepare the annual magazine as well as the Annual Report as a twin set with similar covers and layout. This has become our tradition over the last few years.

### **8. Sashakt**

Sashakt, the society for welfare of girl students of our college, works towards gender sensitization and empowerment of women. With this objective, the society organises a number of activities throughout the year.

Considering the rise in the number of cases of sexual abuse at workplace, an important realization was the need to hold discussions on sexual on the topic. The society organized the screening of a film entitled 'Can't take it anymore', by Dr. Meenakshi Vinay Rai. This movie depicted various instances of sexual abuse which women even at high positions had had to face in their life. The film had a very positive impact on the students, many of whom could relate to some of those instances. The screening of the film was preceded by the students responding to a set of questions regarding what constitutes sexual harassment. On the basis of the analysis of students' responses, Dr. Rai delivered a lecture and clarified various misconceptions and doubts regarding the very definition of sexual harassment.

### **9. UGC XI Plan**

Even though the College always has its hands full with one activity or the other, it has never shirked its social responsibility of extending a hand of help towards those who need it. College has always been sensitive and paid a little

extra academic attention through support classes the form of 'Remedial Classes' mentioned below.

### **REMEDIAL CLASSES**

Remedial coaching classes for preparation for Entrance Exam in M.Sc. Chemistry and M.Sc. Zoology for SC/ST/OBC/Minorities students under the Merged Scheme, UGC-XI Plan were organised during the winter break from 7th December 2011-2nd January 2012. Classes were taken by Faculty from the College as well as outside the College. Students were highly benefited from these classes.

### **HELP CLASSES**

Our college started organizing help classes to aid students prepare for entry into the All India Services to guide and encourage students belong to SC/ST/Minority/OBC/General students in 2011 -12. These classes are funded by UGC XI plan. Our college is the only one amongst the colleges of University of Delhi that run this course.

We initiated the IAS Classes for General studies (Pre cum Mains) and Mains Exam for Public Administration. Applications were received for these classes from all over India. Students were screened through written and interview.

Finally 45 students were selected for GS and 20 students were selected for Mains (Public Administration). Ten students appeared for main examination for various state service commissions and one student, Arif appeared for IAS Mains through our help classes. A student, Amit has been selected in Bank of Baroda as Manager.

## **B. DEPARTMENTAL SOCIETIES**

The 'ANDC Experience' extends beyond the curriculum to a rich tapestry of student clubs and societies that equip students for a life of leadership and civil participation.

### **➤ Department of Biomedical Sciences**

The inaugural function of "Cathexis" Society of Department of Biomedical Sciences was held on August 18, 2011. Professor Vani Brahmachari from Dr. B.R. Ambedkar Center for Biomedical Research, University of Delhi, inspired the students with a very interesting talk on "Nurturing Creativity in and out of the Classroom". She emphasized on the need to improve upon methods of teaching and learning. Her talk stimulated both students as well as faculty. She gave a very interesting examples of what is creativity? How one can develop creativity among students and students can improve their analytical skills?. At the end she also presented a simplified view of her lab work for undergraduate students and explained the role and regulation of developmental genes.

The Department also organized a four day trip to Indian Veterinary Research Institute (IVRI) Mukteshwar and Jim Corbett National Park from 23rd September to 26th September 2011. Students apprised themselves about IVRI, interacted with scientists and visited museum having collection of various conventional biological instruments. On the way to Jim Corbett National Park students halted for some time in Nainital. At Jim Corbett they enjoyed Jungle Safari and observed rich biodiversity and ecology of the region.

The society function of Cathexis was organized on 21st

October, 2011. This year's theme was "Cancer Biology". On the occasion Professor Daman Saluja (ACBR, DU) explained the "Molecular Basis of Cancer". She highlighted the molecular events in cancer origin and progression. She introduced the audience with research work going on in her lab in molecular oncology. Dr. Sameer Bakshi (AIIMS) presented a talk "Cancer Medicine: Basic Sciences to Bed Science". He explained cancer with prognosis, diagnosis and treatment with help of case studies of patients and gave an insight into current advancement into cancer treatment. Inter-college events like quiz, poster making and ad-mad were organized and had participation from various colleges.

#### ➤ **Department of Botany**

A botanical excursion to Udaipur was organised for students of B.Sc.(H) Botany and B.Sc. Life Sciences Part III in October 2011. Forty one students participated in the excursion. Students visited several places of historical importance such as City Palace, Maharana Pratap Memorial, Sajjangarh wildlife sanctuary and Fatehsagar lake. During the four days visit flora of the region was studied and soil samples were collected for various studies. It was a great hands on experience for the students to observe and study the plants in their natural habitat.

#### ➤ **Department of Chemistry**

Like previous years, the students of B.Sc.(H) Chemistry were engaged in research during summer vacation. This year about thirty students worked under six teachers on various summer projects. Two students did their project work at Guru Govind Singh Indrapasth University, Dwarka. A two day workshop

was also organized during summer vacation for the chemistry students where Dr. Neeti Misra and Dr. Pankaj Khanna taught twenty eight students various computer skills required in chemistry research. Dr. Sunita Hooda, the senior most teacher of the department was recognized as a Ph.D. guide. A new laboratory was constructed and became functional in the Chemistry department . A research lab for Dr. Vikrant Kumar's project also became functional. The staffroom wore a new look with new furniture and tables for the staff.

### 7 Department of Commerce

The academic year 2011-12 started by bringing B.Com. (H) course too in semester mode. This year, the department along with career counseling placement cell (CCPC) organized a one day Workshop on 1st November, 2011 on Tally for students of semester I. On 17th February, 2012, Prof K. Mamkoottam, Director -School of Business, Public Policy & Social Entrepreneurship (SBPPSE), Ambedkar University, had an interaction with the final year students of B.Com.(H). He gave important insights to student regarding M.B.A. programme.

Vanijya, the commerce society organized its festival CORPOMAZE on March 2,2012. The festival received participation from many colleges of Delhi University. Many interesting events were organized e.g.- Wear the mask, AD-MAD,Debate,Industrial and Business quiz and The Best Manager. Professor K.Mamakooottam, Director, School of Business. Public Policy and Social Entrepreneurship, Ambedkar University of Delhi was the guest of honour. He was also the judge for the Best Manager event. The winners were awarded cash prizes and certificates. Pranay Moktan of

B. Com.(H) Part III won the best manager award.

### ➤ **Department of Computer Science**

The Turing Society of Department of Computer Science organized 'TECVAGANGA-2011', the inaugural function of its Turing society on August 19, 2011. The Event was an enriching experience for the students to quench their thirst of technological knowledge and understand the world of computers in a better way. Dr. Ruchika Malhotra from Department of Computer Science, Delhi Technological University (DTU) gave a talk on software testing, uses & practices, some poor situations of software engineering that exist in real world. A worksheet was provided to all the students to illustrate testing of a real time program to show the faults that may arise in what one believes to be a perfectly written program. This was followed by a discussion on reasons and methods of rectifications. The festival was a unique amalgamation of entertainment and exposure to latest technologies. A short movie “Future Intelligence” was shown and students gave “Paper Presentation” on new inventions in Technological field or innovations in IT Sector such as Cloud Computing, Silent and Sound Technology, Windows -7, Quantum Computing, i-OS, Tablet Computing and Web Browsing.

In the line, Turing Society also organized a workshop on MOBILE APPLICATION DEVELOPMENT WITH Qt(Nokia) on March 2, 2012. in the Web Facilitation Center(WFC) of the College. Mr. Diwakar Vats, Chief technical officer and Ms. Swati Bharadwaj Technical Leader from Nano-iTechnology were the resource persons. It was an interactive workshop where students learned the concepts and tried hands on



developing mobile applications. Since Mobile Technology is an emerging sector and the market is flooded with many open source hand-held systems which allow users to add and enjoy applications of their choice, learning how to build these applications was a useful experience for the students. It opened a new opportunity to pursue this field as a career.

### ➤ **Department of Electronics**

ELECTRONICA, the society of Department of Electronics, organized a talk by Professor Ajoy Ghatak, former Professor of Department of Physics, IIT Delhi on September 21, 2011. He shared his vast repertoire of knowledge and expertise in the field of optical fibre with students of the department. MATLAB, a proprietary software has been introduced in the new semester scheme of the B.Sc(H) Electronics course which is quite expensive. As an alternative to this, the Department with Dr. Amit Garg as Convenor organized a hands-on workshop on Scilab, an alternative open source software. The workshop 'Scilab and its Applications' was organized for the college teachers of University of Delhi wherein thirty nine teachers and research scholars from various colleges of the University and PG departments participated. The workshop was organized in association with FOSSEE Group, IIT Bombay.

Out of the initiatives and the work done on various computer based experiments in the UGC funded major research project with Dr. Amit Garg as the Principal Investigator, student publications have started pouring in. Students have been attending various national and international conferences in India and abroad. So far, students have attended eleven such conferences and there are seventeen publications by the undergraduate students. Three students from the College

Zameer Khan, Avdesh Kumar Singh and Deepak Joshi participated in a poster competition organized by Shaheed Rajguru College of Applied Science during a "Workshop On Optics" on March 3, 2011. Their poster demonstrated the Malus Law which was highly appreciated by Professor Ajoy Ghatak from IIT, Delhi and it won a consolation prize. Though not part of their curriculum, motivated by the various research activities, students have been regularly attending summer training in the UGC project research laboratory. In the last vacations, it was attended by 40 students.

Department of Environment, Govt. of NCT of Delhi organized a three day science fair on National Science Day on 28 February 2011. Five students (Pratik Chakravarty, Kanika Sandhu, Rahul Singhal of B.Sc(H) Electronics Part II and Praveen Kumar, Ravinder of B.Sc. (H) Electronics Part I along with the Project Fellow in the UGC research project, Ankit Mittal, participated in this event. Students demonstrated various Biomedical sensors like ECG sensor, spirometer and various e- waste items along with a poster presentation on e-waste for imparting an idea among people for the sustainable development. Many people along with Environment Secretary Mr. Dharmendra praised the students for their efforts.

### ➤ **Department of Physics**

National Science Day Program at IUAC

A group of five students of B.Sc. (H) Physics Part II namely, Kapil, Gaurav, Harsh, Sumit and Vijay along with a faculty member, Dr. Rajneesh Kumar Verma participated in the 'National Science Day Program' organized by Inter University

Accelerator Center (IUAC), New Delhi on 28th February 2012. Owing to an overwhelming response of students from B.Sc. (H) Physics and B.Sc. Physical Science (Electronics) for participation in this event, the above mentioned students were selected after a formal screening process. The inaugural talk, delivered by Dr. Amit Roy, Director IUAC was followed by a series of lectures by other eminent scientists and professors of India. In his inspiring lecture, Dr. Roy talked about the grandeur of science in ancient India giving references of ancient Rishis, Aryabhata, Kanaad, Charak, etc. viz-a-viz the modern scientists like Sir C. V. Raman, J. C. Jose, S. N. Bose etc. He emphasized the need to be inquisitive on the part of a student towards the existing beliefs to be a good researcher. Subsequently the students got an overview of the experimental facilities available at the IUAC from Dr. S. Ghosh of IUAC. Ajoy Ghatak, Professor emeritus at IIT Delhi, delivered an outstandingly inspiring lecture on 'Einstein and Special Theory of Relativity' followed by Dr. Ajith Kumar B. P's lecture on interfacing of the science experiments with computers. The students got so enthused and motivated by this lecture that they have already proposed interfacing of a couple of experiments in physics laboratories of the College. Finally the students visited the laboratories of IUAC and saw the huge 'Palatron accelerator'. This visit gave the students an exposure to science & its applications which may be helpful in their future prospects of choosing a viable career in science and technology.

The students of Department of Physics left a mark in the University academia by their participation in many inter-college competitions organized under the aegis of Physics

Societies of various colleges and won Prizes. Details have already given earlier in Students' Achievements.

Three faculty members viz. Dr. Sanjeeta Rani, Mr. Pawan Kumar and Mr. Bineet Kumar participated in a training program on C & C++ Programming Language organized by Department of Physics & Astrophysics during June 8-15, 2012. This program was designed to formulate teaching guidelines for the newly introduced papers on C++ programming & Numerical Methods in B.Sc.(H) Physics.

### ↗ **Department of Zoology**

This academic year the Department also organized two-day workshop for students that involved 'Hands on Training Molecular Phylogenetics: Understanding Evolutionary Histories' during June 14- 15, 2011. The Coordinator of the workshop was Dr. Savithri Singh. The organizers of the workshop were Dr. Monisha Khanna, Dr. Seema Makhija, Dr. Ravi Toteja, all from Department of Zoology, Dr. Sunita Jetly of Department of Biomedical sciences and Dr. Yashewar of Department of Botany. The resource person of the workshop was Dr. Manda Clair Jost, Associate Professor at Western New Mexico University. This workshop provided better understanding of evolution and also addressed various prevailing misconceptions of evolution. The workshop provided introduction about the current emerging trends and applications of molecular phylogenetics and evolution studies. The workshop also provided hands on training on Molecular Phylogenetics i.e. construction of phylogenetic trees & bioinformatics tools. The students compiled information to understand evolutionary relation of various species based on

deciphered with the help of phylogenetic tree. Later a summer training workshop for students on 'Isolation of antimicrobial compounds from soil actinomycetes' was organised by Dr. Monisha Khanna from June 22- July 19, 2011.

The Department organized a lecture by Professor B. Jayaram from Department of Chemistry and Computing Facility for Bioinformatics and Computational Biology, IIT, Delhi on 'Genomes to Hits: The Emerging Assembly line in Silico.' on August 17, 2011. The lecture was helpful for the students to understand structure based computational drug design method which uses in silico solution for personalized medicine (individual specific with no side effects). He provided in depth knowledge of Gene to drug software suite comprising of Chemgenome, Genome analysis programs, Bhageerath, protein structure prediction program, and Sanjeevni, computational tool for drug design. He encouraged students to be inquisitive, logically thinking and having keen interest in Biological Sciences.

The Department also organized of a one day Workshop for teachers on 'Experimental Procedures of Cell and Molecular Biology' on September 9, 2011 wherein teachers got hands on experience in various cytochemical techniques. The coordinators of this workshop were Dr. Monisha Khanna, Dr. Seema Makhija and Dr. Ravi Toteja.

## VII. ENTREPRENEURSHIP DEVELOPMENT CELL

The Innovation and Entrepreneurship Development Centre (IEDC) was established in Acharya Narendra Dev College in July 2010 to motivate students towards Entrepreneurship. This project is sponsored by the National Science and Technology Entrepreneurship Development Board (NSTEDB) of the Department of Science and Technology, Government of India to develop an entrepreneurial culture among the academic institutions. An IEDC facilitates students with the pre-requisite information for setting up an enterprise and encourages them to become successful entrepreneur.

To foster entrepreneurial culture among students, IEDC conducts various training programmes like Entrepreneurship Awareness Camps (EACs), Entrepreneurship Development Programmes (EDPs) and Faculty Development Programmes (FDPs) etc. In addition to this, it also initiates the student projects for innovative ideas each year.

This year, IEDC organized an EAC in Bhaskaracharya College of Applied Sciences during January 4 - 6, 2012. On the last day of the camp, students were taken to NSIC to expose them on the various entrepreneurial opportunities available to them. IEDC also successfully organized EAC in Vivekanand College during January 11-13, 2012, in the College itself during February 21 - 23, 2012 and in Deshbandhu College during March 14 - 16, 2012. This shows its immense commitment to promote entrepreneurship among the students of University of Delhi.

To inculcate a culture of innovation, IEDC has also initiated innovative student projects in various disciplines. These projects have already been described earlier.

## VIII. CAREER COUNSELING AND PLACEMENT CELL (CCPC)

Career Counseling and Placement Cell (CCPC), while entering into the seventh year of its endeavor to provide in-campus opportunities to job aspirants, has continued its drive to enable the young and dynamic students secure their career objectives after the college. About two hundred students registered with the cell. As in past years, CCPC included spectrum of events in its calendar for the academic session 2011-12, not only 'for' but this time 'by' the students as well. Students were involved in event management including planning, organization of an event, database management, effective public information system, interaction with professionals and experts, record keeping etc. to give them the real life experience of various aspects of professional life. In fact, Vaibhav Aggarwal of B.Sc. (H) Chemistry Part II, in his capacity of Student Executive – Career Counseling and Placements, along with other teammates managed events, exhibiting great team work under the guidance of Placement Officer, Mr. Sanjay Vohra. CCPC co-ordinated with Central Placement Cell of University of Delhi and has also organized following in-campus events.

### ➤ **Campus Recruitments**

A centralized campus recruitment drive for WIPRO WASE and WIPRO WiSTA programs of Wipro Technologies Ltd. was organised on January 27-30, 2012. Over two hundred students from twelve other colleges of Delhi University apart from those of Acharya Narendra Dev College participated and one hundred twenty three students including sixteen students

of Acharya Narendra Dev College were selected by Wipro Technologies. Students of Acharya Narendra Dev College have already secured over hundred job offers, till February 2012, collectively from companies like Wipro Technologies, Genpact, Thomson Digital, BVG India Ltd., WNS Global Services, HDFC Life Insurance Co., Convergys, IBM BPO, Modulo One, Addval Solutions Pvt. Ltd. and MB Polyblends.

### ➤ **Career Counseling**

CCPC organized career counseling sessions to expose students to the opportunities in higher studies and job market. A seminar on “Financial Opportunities” was conducted by Bombay Stock Exchange for the students of Commerce. Professor K. Mamkoottam, Director, School of Business, Public Policy and Social Entrepreneurship, Ambedkar University, Delhi, had delivered a talk on “Opportunities after Graduation” on February 17, 2012.

### **7. Skill Development and Self Grooming**

Apart from facilitating job opportunities and counseling sessions, CCPC also organized workshops to equip the students with additional skills to enlist them in the list of preferred candidates. A workshop on Tally-Accounting and Business Management software was organized which was conducted by Dr. Hemchand Jain of Deen Dayal Upadhyay College, University of Delhi on November 1, 2011. CCPC has offered to conduct a self-grooming workshop by professionals involving series of sessions on Preparation for Personal Interview, Group Discussions, CV writing etc. to prepare students to secure place for higher studies or professional career.



## **IX. ADD - ON COURSES**

At times one feels if he could learn 'something different or something extra', which may not be available within the framework of structured courses and syllabi prescribed by the University. To address to these kind of needs, colleges have been given a provision of 'Add On Courses'. The purpose of these 'Add On Courses' is to enhance the overall personality of a student, by offering alternative avenues of his choice. With this in mind, Acharya Narendra College offers following 'Add On Courses':

### **A. EFFECTIVE COMMUNICATION AND PERSONALITY DEVELOPMENT THROUGH THEATRE**

'Effective Communication and Personality Development through Theatre' (ECPDT) is an add-on course for the students of the college. The main aim for running the course is to develop the confidence and sense of responsibility among the students. Apart from the special skills that they learn, students acquire oral communication skills, creative problem solving, motivation and commitment, ability to work under pressure, self discipline, dedication, self confidence, leadership skills and willingness to accept responsibility to name a few. This was the third year of running ECPDT course in the college. The course is self financed and discount in the fee is given to economically weaker students after holding interviews. This year twenty students from different streams got themselves enrolled. Mr. Ajay Manchanda, a well known theatre personality was appointed as the coordinator of the course. The classes were held on weekends and on all days during autumn break in college premises. Various other well known theatre personalities like Ms. Banee Sharad, Mr. Bhumikeshwar Singh, Mr. Neelam Gupta,

Ms. Surabhi Snehi, Mr. Hafeez Khan, Mr. Abdul Latif Khatana, Mr. Lokendra Trivedi and Mr. Avtar Sahni (from National School of Drama), Rewati Saran Sharma (writer of various soaps on Indian Television), Shrivardhan Trivedi (Sansani fame) were invited as guest faculty to train students.

The course ended with a culmination program on October 19, 2011, where the students showcased what they had learnt during the course. The chief guest of the course was Dr. Minoti Chatterjee, Principal, Kamla Nehru College. Ms. Baneer Sharad was guest of honor for the culmination programme. The culmination is put up to showcase the results of the training to the parents of the students and other guests. The college was much appreciated for organizing this course as it had been helpful in making their wards more confident and disciplined. The certificates were given to the successful students.

## **B. FOREIGN LANGUAGE COURSES**

Acharya Narendra Dev College is one of the few colleges in the University of Delhi running foreign language courses successfully for a number of years. In today's world of globalisation, multi-linguists are much in demand and make these language courses much sought after.

Acharya Narendra Dev College offers Certificate, Diploma and Advanced Diploma courses in four languages (Russian, Spanish, French and German).

S.No.	Course	No. of Students Enrolled
1.	Certificate Course in Russian	07
2.	Certificate Course in Spanish	20

3.	Certificate Course in French	27
4.	Certificate Course in German	32
5.	Diploma Course in German	05
6.	Advanced Diploma Course in Spanish	08
	Total	99

### C. ENGLISH LANGUAGE PROFICIENCY COURSE (ELPC)

Acharya Narendra Dev College has students from Delhi and many other states with varied backgrounds. Many of the students find themselves helpless because of their inability to speak, write and understand English well. To help such students the college offers English Language Proficiency Course (ELPC) under the auspices of the Institute of Life Long Learning (ILLL), University of Delhi.

The course gives students practice in using English in a wide variety of contexts relevant to work, study and social activities. It specifically helps students to:

- Understand and respond to spoken language
- Learn how to speak fluently and use appropriate expressions
- Read and comprehend different kinds of texts for different purposes
- Write coherently and effectively in formal and informal contexts.

The course is of 80 hour duration, starting from Jan. 2012 through April 2012, with 2 hour classes, three days per week. There are 27 students enrolled in the course this year. The course is being conducted by Mr. Manoj Kumar Garg.

## X. COLLEGE DEVELOPMENT

Marching forward towards a better campus the College is advancing in leaps and strides. Following development work has taken.

### A. INFRASTRUCTURE

As in the past, this year too saw significant consolidation of the infrastructural facilities and building-up of capacities to provide an intellectually conducive academic environment to the students and teachers. Following table lists in brief the infrastructural development that took place during the year 2011-12 followed by item wise detailed description wherever needed.

S.No.	Work	Status
1.	New Web Centre with Wi-Fi facility in Library	Construction completed and the web centre is functioning to its full capacity
2.	a) Construction of New Library Reading rooms on Ground floor and First Floor.	Work completed and Reading Rooms are fully functional.
	b) Reading Room for Faculty in Library ( Ist Floor)	Work completed and the furnished facility is under full utilization by the faculty
	c) Cubical for Research Scholars	
3.	a) New Chemistry Laboratory	Work completed and laboratory is fully functional.
	b) New Electrical Sub-station on HT connection	Work completed and electrical supply activated on new HT connection by PWD and BSES
	c) Installation of a new 125KVA Diesel Generator set	Installed and facility is fully functional

### **WEB CENTRE WITH WI-FI FACILITY**

The new web centre having high speed wi-fi internet connectivity provided by the University of Delhi, needs a special mention here. The IT Committee of the college has this year worked hard to develop a new state-of-the-art computer laboratory situated in a newly constructed mezzanine floor housing 80 computers supplied by University of Delhi. The constructed area enabled with blazing fast internet, projection facilities, plush furniture and complete BOSE multimedia system has developed into a much-loved corner for the students and staff alike. Many workshops with hands-on sessions have specially been held in this dedicated high-tech laboratory. The hub also houses a separate facility for faculty to study, hold meetings and pursue research.

The IT Committee has also helped spread wireless internet to every nook and corner of the college using routers, repeaters, multiple access points and radio antennas with the result that the college premises are 100 % Wi-Fi enabled. The existing network is so robust that it is able to support more than 1500 users of the Wi-Fi facility at any given point of time. Further, the Wi-Fi network is backed-up by a 30 KVA Uninterrupted Power Supply (UPS), optical fibre based network and has dedicated servers housed in an instrument column kept in climate controlled environs. The servers serve the twin purpose of college user management as well as acting as a gateway for Internet. The college is “one of the firsts” to successfully implement the establishment of the wi-fi network in the campus and the IT committee deserves a special mention on this commendable job done.

**LIBRARY**

Library is the backbone of any academic institution and occupies pride of place. In this college three years back, the library was shifted from its existing location of semi-permanent structure to a new spacious hall, and last year in a very innovative way with engineering creativity divided horizontally to create enhanced reading space for students as well as faculty. This task having been satisfactorily completed, air conditioned reading rooms as well as research space has become available to students and staff this year. Further keeping in mind the changes in curriculum of the courses in view of 'semesterisation' of the University and expansion in the enrolment of students, a special emphasis has been to stock the Library with large number of text and reference books. This could not be possible earlier but for the generous grants received under various heads by the College in the current academic year. This has enabled the library to add 700 additional books in the current academic year thus bringing the total number of books to 25,600. Library added two more magazines to its subscription list in 2011-12. In the month of August, the annual exhibition was organized in the library for students and faculty in which many publishers and book dealers participated. The response of both staff and students was overwhelming.

In order to fortify the security of the College CCTV cameras have been installed at various locations in the College. To further strengthen the infrastructure and basic amenities the College has planned extension of the existing staff room with

separate wings for the mathematics and commerce faculty. A new seminar room with a seating capacity of one hundred fifty people is on the anvil. Apart from this the College is making a provision for more class rooms and Laboratories by construction of a new wing with two floors.

## B. FINANCIAL GRANTS RECEIVED

No growth can take place anywhere without sufficient funds and the college wishes to extend heartiest thanks to all the funding bodies for releasing grants as per the following:

S. No.	Granting Authority	Type/Purpose of Grant	Date	Amount (Rs.)
1.	Directorate of Higher Education	Non-recurring	January 2012	30,00,000/-
2.	Directorate of Higher Education	Infrastructural works (PWD) in the college (for Construction of S.P.S. Type additional floors for Zoology, Biomedical, Chemistry, Botany, Computer laboratories, Class rooms, Seminar hall and student activity centre)	April 2011 onwards	1,34,48,860/-
3.	UGC	Development Assistance	XI Plan	3,50,000/-

**FINALLY...**

As is evident from the report, the college has moved ahead in every sphere be it - academics, sports, dramatics, placing students or generating awareness on various social issues. The college has always been in the fore front in research activities by teachers and students and organizing symposiums, conferences and workshops. I would be failing in my duties if I don't mention the support which college receives from University of Delhi and various agencies which have helped the college in carving its own niche globally and making the college what it is today. I sincerely hope that the college keeps getting such support in future as well. Even in the absence of a Governing Body formed by the Government we have been functioning very well with a 'small' version with members only from the University and the College. This has been possible because students, teachers and staff work together as a close-knit family and each one has faith and confidence in each other. Together we will aspire and achieve higher goals and new heights. Amen.

**Dr. Savithri Singh**

March 28, 2012

Principal



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