

Best Practices I

Directing Youthful Exuberance towards Welfare of the Society

Youths are future of the Nation and their prodigious amount of energy, enthusiasm and exuberance can be purposefully directed towards welfare of the society. This is accomplished through meticulous planning of NSS, NCC, students of environmental sciences, EWM and other departments. Optimal use of colossal energy of Youths has got institution's approbation as one of the best practices.

Besides launching awareness programs on various issues of social and environmental significance, plantations, blood donation camps, organising free health check up, sensitizing on gender issues, NSS and NCC volunteers work with community people to solve their problems and mitigate their sufferings.

The most profound impact and implications of this practice was felt and realised during COVID 19 pandemic. From onset of the peak of the first wave in 2020 to the onset of the second wave wreaking havoc at its crescendo in 2021, the situation became alarming, tumultuous and precarious. Even through this tormenting phase, our NSS volunteers under the able leadership of its program officer Dr. Ratna Amrit exhibited indomitable courage and unflinching commitment to render outstanding services to the society. When the society was in disarray, NSS volunteers and NCC cadets rose to the occasion to help the people in different ways. During this period, our students became active in their surrounding neighborhoods to help people belonging to different strata of the society. NSS volunteers helped different branches of nationalised Banks in maintaining social distancing. NCC cadets, besides preparing masks for the people, also helped district administration in controlling traffic at various points in the city. NSS volunteers also assisted the administration in managing migrant labourers at railway stations, coming by trains from different parts of the country and worked in close unison of the Health Department of the government and district administration. In association with CARE India Foundation and government agencies, NSS volunteers played pivotal role to aware people about the date of their second vaccination. They also assisted government agencies by regulating crowd at vaccination centres. Fifteen NSS volunteers got Appreciation Certificates from the Principal Secretary Health, Government of Bihar.

In past also, our students have done such commendable jobs. In 2018-19, NSS volunteers were assigned the survey and monitoring the distribution of old age pension, by the Department of Social Welfare, Government of Bihar. These volunteers despite many hurdles like lack of awareness among the target group and callous attitude of some officials, accomplished the task successfully. On similar lines, Red Ribbon club of the college is doing commendable work for HIV awareness. Students of environmental sciences, EWM and NSS have done remarkable works pertaining to green initiatives and environmental sustainability in the campus and outside the campus.

The college endeavours hard to inculcate and embed the sense of social responsibility towards the amelioration of the society. For this, various initiatives like envisaging programs of social significance and enthusing students to render their services for welfare of the society. Such initiatives instill sense of confidence, belonging, alacrity and responsibilities among the students to perform their duties for amelioration of the society.

Best Practices II

Nurturing the Potential of Students and Empowering them to build future for themselves.

Students are grater resource with enormous potential of bringing transformation in the society. They are not only the means of financial prosperity but also a vector of social change. As stated in our vision statement, we draw inspiration from a quote “stand by merit” of a sagacious leader Bihar Vibhuti Dr. Anugrah Narayan Sinha, on whose name this college has been established, we train our students to “ build future for themselves “. We strive our best to encourage our students to take charge of treading diligently even the arduous path on their own by transforming their attitudes, beliefs, strengthening their self-esteem, self- efficacy and confidence. This is achieved through multiple paths like running MOOCs, student development programs, exchange programs, extension activities, workshops, seminars/ webinars, creating opportunities for learning critical skills on their own, academia- industry interactions, assigning projects, involvement in various researches and central instrumentation centre, field works etc. Students and teachers are facilitated international exposures through various international linkages and exchange programs.

Earlier we were running student development programs with ease but outbreak of the pandemic in 2020, loomed large on continuation of such programs. We took up the challenge and planned hectic online activities and frequency of online SDPs was increased. Even in midst of gruelling and devastating circumstances in 2020 and 2021, through our persistent efforts, we succeeded in bringing Massive online courses like Coursera (A. N. College on Coursera) IIRS-ISRO courses and NPTEL- SWAYAM courses. Coursera. Coursera is worldwide huge educational platform for 5700+ specialized Massive Online Courses (MOOCs) partnering with 200+ top universities of the world like Stanford, Illinois, Yale, Princeton, California, Pennsylvania, Columbia, Duke, Michigan, John’s Hopkins, Toronto, Edinburgh, Imperial College etc. Coursera provides large number of free online courses, which our students availed. We succeeded in persuading Coursera Administration in India and abroad to waive the fees of \$45- 50 for our students. Our students took keen interest in it and got above 1200 certificates in different courses after passing online examinations. Students are also availing NPTEL-SWAYM courses in large number. Our College has been designated as Local Chapter of NPTEL-SWAYM. Students of Science, Management, Social Sciences and Humanities are availing opportunities to sharpen their skills. Under IIRS-ISRO program, our students learnt intricacies of Geospatial Inputs for enabling Master Plan, RS Applications in Agricultural Water Management, Basis for RS, GIS, and GNSS, Remote Sensing and Digital Imaging, Global Navigation Satellite System and Geographical

Information System. We imparted 10- 15 days SDPs on our own in Instrumentations, Research Methodology, Machine Learning: Logistic Regression by our alumnus in Newyork, Web Development using HTML in association with AZTECH Technology and Engineering, Chem Collective Lab and Libre Office Suite 6.3 in association with Spoken Tutorials, IIT Bombay.

These courses enabled our students to learn on their own and imbibe the requisite skill sets and scruples of Science and Technology, Social Sciences, Management, Life Skills, Data Analytics,

Data Mining, Machine Learning, Python Programming, Java, Web designing, Business Analytics, GIS, Global Navigation System, Remote Sensing and many more skill-oriented courses of the topmost universities of the world to do better in fiercely competitive global job markets.

We believe that our students should be equipped with essential scruples and adroitness to compete in diverse global environment. Depending upon their inclinations, students also get trainings in research projects, extension programs, conducted by NSS and NCC to be imbued with confidence, appropriate skills and camaraderie to work in unison and also independently. Workshops Seminars/webinars, speech competitions, panel discussions, S.N. Sinha Memorial Lecture Series organised on our own and in collaboration with industries, government departments / organizations, NGOs, Research Institutions etc. encourage and inspire our students for innovations and entrepreneurship. Teachers play a vital central role in creating learning opportunities and facilitating a platform by offering differentiated opportunities for talented students to achieve their ambition.

Performance of the institution research extended to community

Our vision statement delineates and nurture hopes that students of our college would have **“knack for solving growing demands of the society, germinate innovative ideas and would model environment to face global sustainability challenges.”** We believe that **“we can build youths for future”**. In consonance with the above-mentioned statement, our R&D activities are oriented towards amelioration of the society through Fluoride and Arsenic identification/ testing, awareness and mitigation strategies in drinking water of Bihar. The ultimate goal of meaningful scientific researches and efforts are to solve societal problems and to develop technological and scientific solutions for benevolence of the society.

Fluoride and Arsenic contaminations in drinking water are rampant in Bihar. At A.N. College Patna , two research groups/centres respectively for Fluoride and arsenic are committed to focus their studies and researches on these two contaminants for benefit of the society. Our Centre for Fluorosis Research (CFR) is doing commendable work in Fluorosis endemic district of Bihar. This project is being financed by UNICEF, Bihar. CFR centre is providing technical assistance to PHED ,Govt. of Bihar, local administration comprising of district magistrate, civil surgeon, district welfare officer and engineers of the concerned district in improving water quality, monitoring and mitigating ill effects of water contamination on the health of the

people in Fluorosis endemic districts of Bihar approved by UNICEF, Bihar. This centre through its intensive researches has developed nutrients support in form of Moringa/ sahjan and chakora bhaji to be effective against fluorosis. This centre has covered different panchayats of Rajauli consisting of about 109 villages /habitations covering more than 86000 population. It has focused its attention on making the water sources fluoride safe and therefore this centre is also providing relevant information and technical assistance to Jal- Jeevan- Hariyali Yojna of the government of Bihar. This centre at the college developed Information Education Communication (IEC) materials in forms of poster, pamphlets, leaflets, flyers, booklets, IEC displaying boards, audio jingles, slogans, wall- paintings etc. It frequently launches community mobilization/ awareness programs for WASH (Water, Sanitation and Hygiene), and distributes nutrients support Moringa / chakora powder (developed and processed by this centre) to community members residing in the fluorosis endemic areas. Its community mobilizations in association with various government departments for prevention, control and mitigation of fluorosis have yielded good results.

Arsenic group through international and trans- national projects has immensely contributed to Bihar in arsenic mitigation strategies An international project entitled “ Project INNOWATER – Evolvement of Novel and Rapid Monitoring Sensor in Rural Settings of Bihar “ dealt with an innovative method of quick monitoring of arsenic contamination in drinking water in rural areas of Bihar. This group in association with its international partners succeeded in installing an arsenic filtration unit being operated through solar energy in Maner Block of Patna district. DST- NIAS sponsored project on “ Community based technological solution for providing safe drinking water to Arsenic exposed population in Ganga- Meghana – Brahmaputra Delta “ has contributed immensely in improving the water quality in this region. At Maner Block in Patna district, villages have been tremendously benefitted from the clean water that is now pumped from deep borewells that were dug for understanding hydrology of the arseni-ferrous aquifers. After close monitoring and comprehensive testing, these borewells were declared arsenic safe and these were alongwith hand- pumps were donated to villagers in consultation with our international research partner TU Delft, The Netherlands. These now serve as safe drinking water sources.

The mitigation strategies pertaining to Fluoride and Arsenic have been widely acclaimed nationally and internationally. These action – research programs have become mutual learning platform for academia and community people in fluoride and arsenic affected areas and “ laboratories have been extended to local population “. In this way our endeavours to motivate teachers, researchers and students to undertake innovative academic pursuits that meet the societal demands are on road to success.