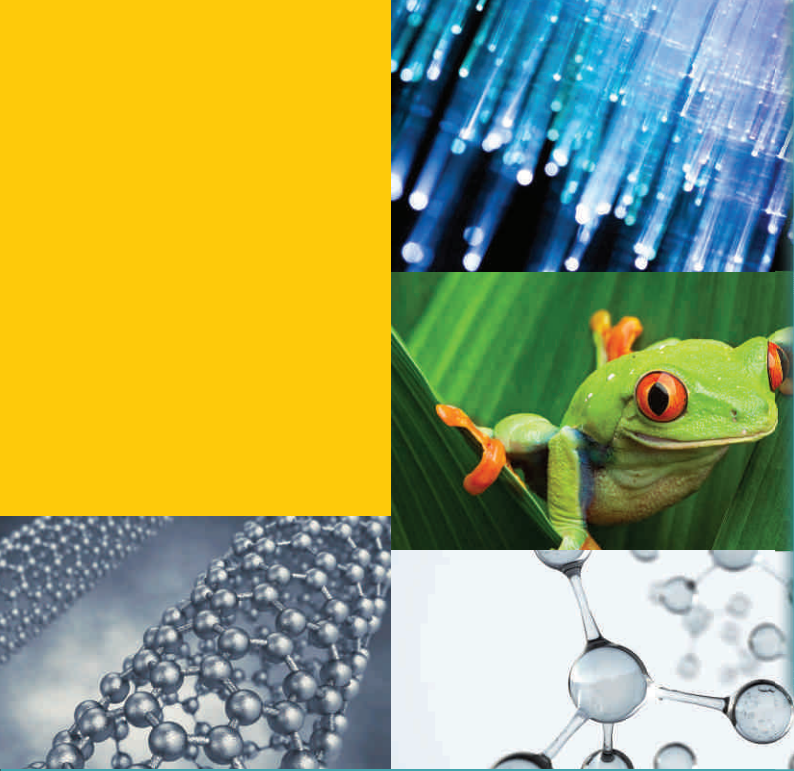


Newsletter

Issue: October-December 2015



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**Uttarakhand State
Council For Science
& Technology**

Editorial

Dear Reader,

Welcome to the latest issue of the Council's quarterly Newsletter. Before we discuss with you about our activities we at the UCOST wish you a Very Happy New Year. A major feat achieved during this quarter was the sanctioning of a Center of Excellence on forest based livelihoods by Ministry of Environment & Forests, New Delhi. The Center will delve on issues related to the impact of forests on livelihoods of people living in forest fringes and its socio-economic analysis.

Well, this quarter too, we went about our usual science popularisation activities, some of which do merit your attention. One such activity was a popular lecture on Shivlingams by internationally known expert on Himalayan geology, Professor K S Valdiya. In his talk, he revealed that Shivlingams found across the country

including the Himalayan region took shape due to the geological activities. According to the expert, the Shivlingams also include the several abodes of Lord Shiva namely Om Parvat in the Uttarakhand Himalaya and Mallikarjun, Raeshwaram and Omkareshwar etc. in the south.

Equally important were our other activities like the 'Vigyan Manthan' programme in which scores of students from Madhya Pradesh participated. Similarly, several boys and girls studying in classes 6 to 10 visited the Regional Science Centre (RSC) from different parts of the state to participate in a programme organised as part of the 'Scheme for Early Attraction of Talents (SEAT).

In yet another workshop on water quality management, young scientists were encouraged to develop and modernise

water purifier systems. Incidentally, facilitating clean drinking water for the state-run schools was also the aim of our recently launched project. Under that project, which also happens to be one of our latest success stories, water samples taken from 20 state-run schools were tested. Based on the primary data available, we recommended to school authorities a series of measures so that safe drinking water is available to students in all state-run schools.

Finally, we assure you that we here at the UCOST will continue to contribute to the state's development, which is also an integral part of our mandate.

Wish you a pleasant reading,

Dr. Rajendra Dobhal

Director General

UCOST Activities

Dr Rajendra Dobhal elected Fellow, National Academy of Sciences, India (NASI)

In a singular honour for the state, Dr. Rajendra Dobhal, Director General, UCOST was selected as the Fellow of NASI, one of India's prestigious scientific institutes. The fellowship is a national recognition of Dr Dobhal's contribution to the field of Science & Technology in the state. His relentless pursuit of scientific excellence has structured a foundation of science and technology, which is unmatched in any of the three nascent states that were created along with Uttarakhand way back in 2000.

Sanction of Center of Excellence for Forest based Livelihoods in Uttarakhand

The council was recently sanctioned the ambitious programme the Center of Excellence for Forest based Livelihoods in Uttarakhand by Min. of Environment & Forest, New Delhi. After rigorous screening by the Ministry and two rounds of reviewing & questioning by Cabinet Minister of Environment & Forest Mr. Prakash Javedekar himself & Dr.

S.S. Negi, DG, Forests, the Center was sanctioned to the Council. Dr. Kirti Joshi & Dr. Ashutosh Mishra represented the council during the presentations.

Students from MP visit UCOST on 6 October, 2015.

To ignite the youth's interest in science and technology, UCOST organised a 'Vigyan Manthan' programme in which some 150 students from Madhya Pradesh Council of Science



& Technology (MPCST) participated. On the occasion, two popular lectures were also organised. Dr G S Rawat, a senior scientist at Wildlife Institute of India (WII), Dehradun delivered a lecture on 'Glimpses of Himalayan Biodiversity' and Dr. N.G. Srivastava, Scientist, PCRI, BHEL, Haridwar spoke on 'Water Quality & its Sources.' The programme was sponsored by the MP government.

Padmabhusan Dr. Vinod Prakash Sharma remembered

Rich tributes were paid to Padmabhusan Dr. Vinod Prakash Sharma (FNA, FASc, FNASc, FAMS, FTWAS) at a condolence meeting held at UCOST on 12 December 2015. Late Dr Sharma, a renowned scientist of international repute, died recently. He was known for his path-breaking work in the field of basic and applied research in malaria and vector biology. Padmashri Prof. A.N. Purohit remembered the departed scientist for his contribution to malarial research. Dr Rajendra Dobhal, DG, UCOST remembered Dr. Sharma as a very down to earth person and a visionary scientist. He was conferred the prestigious 'Science & Technology Excellence Award' at the 8th 'Uttarakhand State Science & Technology Congress 2013' organised by UCOST. Speakers also remembered the key role Dr Sharma played in establishing the Uttarakhand Chapter of the National Academy of Sciences India (NASI).

84th birth anniversary of Dr. Kalam celebrated by UCOST and Doon Library

UCOST and Doon Library & Research Centre organised jointly a seminar on 15 October 2015 to commemorate the birth anniversary of late President Dr Abdul Kalam. It was chaired by Dr. Dharendra Sharma, a former professor at JNU and a friend of Dr. Kalam. Invited speakers included Dr. R. S.Tolia, former Chief Secretary, Uttarakhand and Dr. Rajendra Dobhal (DG UCOST) who shared their views on the 'missile man of India.'



Popular Lecture by Padmabhusan Dr. K.S Valdiya (FNA, FNASc, FTWASc) on 17 October, 2015

Did you know the Shiva Lingams found across the country took their shape due to the geological movements? Renowned geologist K S Valdiya revealed that while delivering a popular lecture on organized recently by UCOST. Some of the famous Shiv lingams or holy shrines include, Om Parvat, Mallikarjun, Rameshwaram and Omkareshwar. These natural marvels, scattered all over the country, took shape due to geological reasons like land movements caused by tectonic activities that also led to faults and exotic blocks. According to Prof Valdiya, Shiv Lingams were also formed owing to formation of glacial faceted rocks. Prof A. N. Purohit presided over the session and emphasised that scientific



temperament should be inculcated among young students by organising popular science lectures in different districts of the state. Earlier, welcoming Prof Valdiya, DG, UOCOST, Dr Rajendra Dobhal, introduced him to the audience as one of the most decorated geologist of India.

Nearly 250 participants including scientists, students, faculty & researchers attended the lecture. Padmshri Suman Sahai also graced the occasion. Dr. Kirti Joshi and Dr. D.P. Uniyal of UCOST coordinated the lecture.

Meeting held with Dr C.S. Nautiyal (FNA, FNASc, FNAAS)

The UCOST plans to organise a 'Science Conclave' to mark 10 years of its completion. In that connection, Rajendra Dobhal, DG, UCOST had a meeting with Dr C.S. Nautiyal, FNA, FNASc, FNAAS, Director, National Botanical Research Institute (CSIR-NBRI), Lucknow, at UCOST, Dehradun on 19th October, 2015.

Popular Lecture By Dr. Surendra M. Ghaskadbi, Scientist-G & Coordinator-AGRI-Pune organised by UCOST

On 30th Oct, during a popular lecture organized at the UCOST conference hall, Dr. Ghaskadbi, described about the procedural development of shape and sizes of different plants and animals. Explaining about the extinction of some species and evolution of others, he elaborated upon the pivotal role of the environment played in this developmental process.

Nursery of medicinal herbs to be established in Gangi

DG, UCOST along with Ayurvedic physician Vaidya Balendu and members of the taskforce of medicinal plants, visited Gangi, on 6 October 2015 to start a nursery of herbs like Kooth, Jadwar, Attees and Chairayta in that remote border village. These medicinal herbs grow in the wild of Gangi and have a huge demand both in the domestic and the international market. Dr. Rajendra Dobhal, DG, UCOST has assured that he would see to it that turbines are set up at Gangi to ensure power supply to India's last border village.

Function held to promote importance of Science

To mark Uttarakhand's Formation Day (November 9), Vaidya Chandra Prakash Cancer Research Foundation, Dehradun, organised a function in the city that was attended by scientists and representatives from different fields. The function celebrated various achievements the state has recorded in the field of Science & Technology since it came into being 15 years ago. There are some 28 science technological councils in the state, which are doing outstanding work. Dr. Rajendra Dobhal, DG UCOST, one of the well-known scientists from the state was recently selected a Fellow of the prestigious National Academy of Science (NAC), which is a great honour.

Students participate in "Hands on Activity" workshop

SPECS and UCOST organised jointly a two-day workshop which concluded at Him Jyoti School on November 15. The workshop was organised with the active support of Next Education, a Hyderabad based company dealing in science communication. About 167 children and eight teachers participated in the workshop. The concept of fun science was implemented in toy making during the seminar.

Two day workshop on water quality management at UPES The young scientists should work to develop and modernise water purifier systems, said the Director General of UCOST, Dr. Rajendra Dobhal while addressing the inaugural session of a two-day workshop on water quality management that concluded here on 25th Nov. He assured every possible help to the youngsters on the subject. Dr Dobhal, however, regretted that efforts to conserve a precious resource like water were not bearing fruit owing to sheer negligence. He also highlighted the quality of water in the region and diversity of its aquifers while expressing deep concern over the low cost of water, which, he said, led to its wastage. More than 150 delegates from many universities participated in the workshop.

UCOST participated in India International Science Festival (IISF) in Delhi

The IISF is expected to be the country's biggest ever Technology and Industrial Expo, Union Minister for science & technology and earth sciences Dr. Harsh Vardhan said. The five-day festival (4-8 December, 2015) showcased the achievements of Indian scientists and institutions. It also



explored ways to translate academic research into industrial applications so that the common man could be benefited and scientific temper could be inculcated among youngsters, especially school children. The festival is a platform for scientists to share their ideas and expertise. Approximately 3000 young scientists from the country participated in the function as delegates. The Union ministry of science and technology organised the event. Dr. Kirti Joshi and Mr. Manmohan Singh Rawat showcased the Council's achievement at the science festival.

UCOST hosts Three Days National Conference

On 21 Dec, 2015 Honourable cabinet minister for science & technology Shri Surendra Singh Negi inaugurated a Three-day National Conference 'Monitoring and Management of Drinking Water Quality' & XXVIIIth Annual Conference of National Environmental Science Academy (NESA) that concluded on 23 December. Dr Laxman Prasad, Former Advisor, WTI program of DST, Govt. of India delivered a keynote address on "From Surplus Water to

Water Scarcity for India in 2100". Er. R.D. Singh, Director, National Institute of Hydrology (NIH) delivered the presidential address. Dr Rajendra Dobhal, DG, UCOST also addressed the gathering. The programme concluded with the felicitation of NESA awardees. The Life Time Achievement award was presented to Dr Laxman Prasad. Honourable Cabinet Minister, Shri Dinesh Agarwal attended the valedictory function. The conference was organised jointly by NESA, New Delhi; UCOST, Dehradun; Uttarakhand Jal Sansthan; TERI University, New Delhi and several other reputed institutes.



Patent Information Centre (PIC)



IPR Awareness workshop

A daylong Intellectual Property Rights (IPR) awareness workshop on "Protection of R&D Outcomes through IPR" was organised at Government Postgraduatge College, Karanprayag (Chamoli) on 30 October 2015. Its principal S.D Benjiwal inaugurated the workshop and welcomed the participants. Mr. Anil Kumar, Scientist-B at UCOST while delivering a lecture at the technical session explained how patents can be registered and assigned. Mr. Pankaj Kumar, Assistant Professor, IIS University, Jaipur spoke on Trade Marks and G.I.

Patents/Designs filed

In the last (Oct-Dec 2015) quarter the Patent Information Centre (PIC) filed two patent applications at patent office, New Delhi. These (patent) applications pertained to 'A Process for the preparation of smart coatings of conducting polymer composites for corrosion protection in marine environment' with No. 3608/DEL/2015 and "Braille Embosser" with No. 3223/DEL/2015. PIC also filled a Design application "Soil Polybag Packing Machine" with Application No "276980" at Design Office Kolkata.

SUCCESS STORY: Research in the Spotlight

Scientific evaluation of water quality in state-run schools launched

Introduction

To facilitate clean drinking water in state-run schools, UCOST recently launched a three-year project in Uttarakhand's Kumaon and Garhwal regions. Under the project water quality in 20 schools was evaluated. The initiative had a two-fold purpose: to check whether students are getting safe water to drink and to suggest to the school authorities a management plan for a supply of clean drinking water. The project is being funded by the Department of Science & Technology, Government of India.

Project Details

Duration of the project: Three years

Total Cost: Rs. 47, 54,000.00

Manpower: 1 Project Assistant

Significance of the project

1. Project ensures the quality of drinking water in state-run schools in Uttarakhand
2. Regular monitoring and maintenance of water storage in schools
3. Creating awareness among school staff regarding the provision of safe drinking water

Accomplishments

The primary data on water quality were analysed by Pollution Control Research Institute (PCRI) at BHEL, Haridwar in

keeping with the Standard Methods for Examination of Water and Waste Water. These methods have been prescribed by American Public Health Association (APHA).

Water samples collected from 20 state-run schools were analysed on various relevant parameters. They are pH, Total Hardness, Iron, Chloride, Fluoride, Dissolved Solids (TDS), Sulphate, Nitrate, Cadmium, Arsenic, Lead, Copper, Total Coliform and Total Residual Chloride.

All the results were compared with the drinking water quality standard IS 10500. Based on primary and secondary information on different environmental issues relating to water supply system, samples collected from the schools were assessed and an action plan on remedial measures was prepared.

Recommendations

1. Renovation of water supply system and storage tanks should be done in all schools
2. Water disinfection system should be installed on water storage tanks in all state-run schools for both simple and liquid chlorination.
3. Awareness and skills needed for a regular monitoring and surveillance of water storage tanks should be developed among the staff members of all state-run schools.
4. Water quality awareness programme should be included in the curricula of the twin schemes namely National Social Service (NSS) and National Cadet Corps (NCC).
5. Provision for keeping test kits may be made for each school for a regular assessment of water quality based on important water quality parameters.

REGIONAL SCIENCE CENTRE (RSC), Dehradun

Some 50 students studying in classes 6 to 10 visited the Regional Science Centre (RSC), Dehradun from different parts of the state to participate in a daylong programme 'Scheme for Early Attraction of Talents (SEAT) on 1 December 2015. The programme was organised as part of the government of India's initiative 'Innovation in Science Pursuit for Inspired Research' or INSPIRE. Officials from NCSM explained to the students about the exhibits displayed

at Fun Science Gallery, Frontiers of Technology gallery, Himalayan gallery and Science Park. They were also informed about the programmes initiated under INSPIRE like Scholarship for Higher Education (SHE) and Assured Opportunity for Research Career (SORC). Officials who gave the demonstrations were Engineers Abhijit Sarkar and Abhijit Mahto from NSCM and Dr Kailash N Bhardwaj, Pankaj Rawat and Pankaj Thapliyal from RSC, Dehradun.

New Projects Workshop/ Seminars Sanctioned

S. No.	Name & Address of the Convener/ Organizing Secretary	Topic/Title	Duration
1	Prof. Anuradha Kusum HIMS, Swami Rama Himalayan University, Dehradun , Uttarakhand	45 th Annual National Conference of Indian Academy of Cytologists	19-22 November- 2015
2	Dr. Lalit Pande, Padma Shree Director, Uttarakhand seva Nidhi Paryavaran Shiksha Sansthan (USNPSS), Jakhan Devi, Mall Road, Almora	SAMVAD 2015	30-31 October-2015
3	Smt. Kamla Pant, Chairman PAHAL, Vivekanand Gram Jogiwala, Haridwar Road, Dehradun	Children Science Congress-2015	December, 2015
4	Sh. S.S. Rawat General Secretary Bharat Gyan Vigyan Samiti Uttarakhand Defence Colony, Dehradun	International Light Year -2015	September, 2015
5	Dr. R.A. Singh Head, Depart. Of Geography, L.S.M Govt. P.G. College, Pithoragarh	Awareness of Intellectual Property Rights(IPR)-Specific in Geographical Indication	25 February, 2016
6	Dr. Ravi K. Shukla Associate Professor Department of Physics, DIT University, Mussoorie Diversion Road, Dehradun	22 nd National Conference on Liquid Crystals NLCC-22	21-23 December, 2015
7	Prof. P.C. Tiwari, Head, Dept. of Geography, DBS Campus, Kumaon University, Nainital	Climate Change Impacts and adaptations in Himalayas: Science & Policy interface	2-3 November, 2015
8	Prof. B.L. Sah Director, UGC-Academic Staff College, Kumaon University, Nainital	Human & Social Dimensions of Science & Technology	October, 2015
9	Prof. M.S.S. Rawat Department of Geography H.N. B.Garhwal University, Srinagar, Garhwal	Climate Change, resources, Biodiversity & environmental Challenges: Issues and strategy for sustainable Development	28-30 October, 2015
10	Dr. Chandan Singh Negi Associate Professor, Department of Zoology, LSM Govt.P.G. College, Pithoragarh	Paryavaran 2015 National Seminar on Biodiversity & Culture: Means & Ways to Conserve	2 nd Week of December, 2015
11	Dr. Pradeep Kumar Singh Chauhan, Senior Scientist, Central Building Research Institute, Roorkee (CSIR)	Natural Disaster and Challenges of Climate Changes	10` 11 December, 2015

HR News

- Dr. D.P. Uniyal & Dr. Kirti Joshi represented council for the DST S&T councils meet at India Habitat Center, New Delhi on 14 Dec 2015
- Dr Kailash N Bhardwaj, Junior Scientific Officer delivered a Guest Lecture, “Genetic Engineering: Tools, Techniques and Applications” at Uttaranchal (P.G.) college of Bio-Medical Sciences & Hospital, Sewla Khurd, Dehradun on 3 December, 2015.
- Bhardwaj, KN., Jain, KK. Kumar, S. & Kuhad, RC. 2015. Microbiological analyses of traditional alcoholic beverage (Chhang) and its starter (Balma) prepared by Bhotiya tribe of Uttarakhand, India. Indian J. Microbiol. (In Press. DOI: 10.1007/s1208801505606)
- Kumar, S., Jain, KK., Bhardwaj, KN., Chakraborty, S. & Kuhad, RC. 2015. Multiple genes in a single host: Cost-effective production of bacterial laccase (cotA), pectate lyase (pel), and endoxylanase (xyl) by simultaneous expression and cloning in single vector in E. coli. PlosOne (In Press. DOI: 10.1371/journal.pone.0144379).
- Dr. Rajendra Dobhal, DG UCOST inaugurates three-day cultural fest at IMS Unisson University, Dehradun.
- Mr. Manoj Kumar Singh, Scientific Assistant & Mr. Himanshu Goel, Project Scientist delivered lectures on IPR at Government PG College Karanprayag on 30 October, 2015.
- Mr. Manoj Kumar Singh, Scientific Assistant & Mr. Himanshu Goel, Project Scientist delivered lectures on IPR at Uttaranchal College of Science & Technology, Dehradun on 4h December, 2015.
- Mr. Manoj Kumar Singh, Scientific Assistant & Mr. Himanshu Goel, Project Scientist delivered lectures on IPR at Rajeev Navodaya Vidyalaya, Raipur, Dehradun on 19 December 2015.
- Mr. Manoj Kumar Singh, Scientific Assistant & Mr. Himanshu Goel, Project Scientist Attended an Advanced cum Training on IP Management at NASC Complex, New Delhi Organised By DRDO and TIFAC, New Delhi.

REGIONAL SCIENCE CENTRE



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