

BUZZER

PUSHPA GUJRAL SCIENCE CITY

e-newsletter

July-September 2021

Message from the Desk

Warm greetings from PGSC.

The ever increasing role of Science and Technology in myriad aspect of common life has been most brought out during the COVID 19 pandemic when the common man, with little background of science, has been inundated with jargon of information on various contemporary issues. The importance of simplification of complex scientific issues for easy understanding of the masses and effective science communication has, therefore, increased multifold.



I am happy to inform you that despite the obstacles which we all have been experiencing during the past months, PGSC has continued to move forward through its dedicated staff by reaching out to various target groups through on-line webinars, Mobile Exhibition and new galleries.

As visitor numbers are gradually increasing, the past 3 months witnessed 28 activities in hybrid mode (on-line and off-line) with a participation of a large number of students and people. Our Mobile Science Exhibition came back into action reaching out to rural areas and more and more students walked in to learn about environmental issues under the compulsory Environment Study Course. The Nuclear Power Gallery at Science City was upgraded by the Nuclear Power Corporation of India Limited as part of their pan-India project to set up nuclear zip galleries at various Science Centers across India and work on the upcoming Mathematics Gallery was undertaken in full swing. We will soon be presenting the gallery to you.

Amidst all this, we have ensured that strict COVID protocols and guidelines are followed in all our off-line activities. The virus is still around and even a small negligence can dampen the forthcoming festive spirit in October and November.

Wishing you safe and happy festivals.

Dr Neelima Jerath
Director General





Nuclear Power Gallery Opens to Public



The Nuclear Power Corporation of India Limited has upgraded the Nuclear gallery located in the Energy Park of Pushpa Gujral Science City Kapurthala. The aim of the gallery is to propagate awareness for enhancing and improving the public perception and understanding of Nuclear Power in the country. The gallery was inaugurated by Dr. Neelima Jerath, Director General Science City on July 14, 2021. The gallery showcases various aspects of nuclear energy, benefits and hazards of nuclear power and its applications for the betterment of human life and environment. The gallery also focuses on several salient aspects of nuclear power generation through fascinating audio video interactive exhibits.



Back into action



Reaching the Unreached through Mobile Science Exhibition Bus:

The exhibition tour restarted, as per route provided by Department of School Education. The exhibition covered 120 schools, reached out to >11000 students and general public in rural areas (Distt. SAS Nagar, Fatehgarh Sahib, Ropar and Patiala).

Field Visit under Environment Studies:

Field visit of 187 students from Gulzar Group of Institutions, Khanna was conducted on September 18, 2021 under the compulsory course on "Environmental Studies" for Under Graduate students as per UGC guidelines.



International Webinar on Science Journalism: From Print to Screen (September 24, 2021)

Pushpa Gujral Science City, jointly with Vigyan Prasar, organized International webinar on 'Science Journalism: From Print to Screen' to provide a platform to budding journalist to improve their skills and develop professionalism in Science Communication.

Dr Nakul Prashar, Director, Vigyan Prasar in his telephonic address said, "Developments and advancements in science communication and digital media have benefited the society and the common man in creating scientific temper and in the fight against COVID Pandemic and social evils, like superstitions, etc., while generating self-confidence, courage and faith in themselves. Science outreach through Electronic and Social media is, therefore, need of the hour".

Dr. Neelima Jerath, Director General, Science City, in her welcome remarks, said that Science Journalism has been progressively developing in India in terms of quality and quantity. It is for science communication to effectively place public interest at the heart of 'how' and 'what' of scientific knowledge produced, shared and applied. Digital science magazines, social media, feature services and programs have led to progress in the field. Hence, there is a growing need for digital media skills among journalists and communicators.

Dr. Rintu Nath, Scientist F, Vigyan Prasar, during his talk said that reporting and disseminating scientific content through print, digital, electronic, and social media needs to be taken up on a large scale and Vigyan Prasar is constantly making endeavours in this direction. Time has come to realize that empowering people with relevant information will go a long way in creating a society where everybody will reason and act scientifically.

Ms. Kathryn Tuccelli, an alumni of Purdue University and Communication Analyst & Content Strategist at OXY, USA, delivering her key-note talk on 'Effective Science Communication in a digital world', said that the digital medium of mass communication is most effective to get in touch with people living in the remotest corners of the world and delivering messages to defined target audience comprehensively. She discussed modern methods of digital communication and how AI is playing an important role in sifting content for audiences with varied requirements.

A panel discussion on "Transformation of Communication Media: Print to Screen" was organized at the occasion. Ms. Nishat Nayla, SDG Educator, Bangladesh, spoke on how digitalization of journalism has improved lives of people of Bangladesh. Mr. Dustin Wenzel, an alumni of University of Texas at Austin, USA, and a Communications Consultant, in his interesting talk, said that it was a proven fact that there exists no parallel system that holds superiority over the far-reaching and efficient delivery mechanism of mass media. He discussed the nuances of writing stories for various digital mediums. Mr. Rajeev Bhaskar, Chief Editor (Digital Platform), Punjab Tribune, said that news web portals play an important role to spread scientific news and stories. The panel discussion was moderated by Dr. Neelima Jerath. The panel discussion concluded that Science Communication is undergoing great transformation as more and more people are adopting social media/digital platforms, in addition to print media, to share scientific communication.

More than 100 participants from leading newspapers, experts from National Council of Science Museums, Heads of various Science Centres pan India, students and teachers of Mass Communication from 10 Universities (Delhi University, Bangalore Institute of Technology Deemed University, Kurukshetra University, Amity University, DAV University, Chitkara University, etc.) and 8 colleges (including Madras Christian College-Chennai, Samvaad School of Media and Culture-Bhubneshwar, HMV and KVM, Jalandhar, etc.) across India, as well as, budding journalists participated.



Dr. Nakul Parashar
Director, Vigyan Prasar, India



Dr. Neelima Jerath
Director General, PGSC, India



Dr. Rintu Nath
Scientist F, Vigyan Prasar, India



Ms. Kathryn Tuccelli
Communications Analyst, Corporate Communications, OXY, USA



Ms. Nishat Nayla
SDG Educator,
Deptt. of Education, Bangladesh



Mr. Dustin Wenzel
Communications Consultant
Houston, USA



Mr. Rajeev Bhaskar
Chief Editor
Punjabtribune.com, India

Van Mahotsav

To create enthusiasm among masses for forest conservation and planting trees as well as, to highlight the crucial role forests play in achieving Sustainable Development Goals, Van Mahotsav is celebrated annually from July 1-7. PGSC organized a webinar on "Role of Microbes in Sustainable Forest Management" on 07.07.2021.

Dr. Vipin Parkash, Scientist-F & Officer-in-Charge, Forest Pathology Division & Programme Coordinator (Forestry) from Forest Research Institute (Deemed University), Dehradun was the key speaker. He emphasized that soil microorganisms are important part of forest ecosystem and play an important role in sustainable development of forestry. Further, microbial life has been present on earth for at least 3,500 million years and microbes also play numerous roles as silent partners in human activities such as forestry, agriculture, mining and water treatment. A balanced community of microorganisms is extremely important for trees health and play a vital role in converting barren, poor quality land into cultivable land. Around 100 students and teachers from all over Punjab participated in this webinar.



Dr. Vipin Parkash

Competitions like "Plant Native Tree-Species" and "Heritage Tree Contest" were organized. Around 97 entries in "Plant Native Tree-Species" contest and 46 entries in "Heritage Tree Contest" were received from students and general public from all over Punjab.

International Youth Day (August 12, 2021)

International Youth Day (IYD), observed annually on August 12 is an awareness day designated by the United Nations to draw attention to a given set of cultural and legal issues surrounding youth. The first IYD was observed on 12 August, 2000. The theme of International Youth Day 2021 was "Transforming Food Systems: Youth Innovation for Human and Planetary Health".

Dr. Manoj Kumar Patel, Principal Scientist, CSIO was the key speaker at the event. He has the distinction of being a CSIR Young Scientist awardee and six innovations to his credit at a young age of 33. During his address he said that, energy, creativity, enthusiasm, determination, and spirit of youth needs to be strengthened to achieve



Mr. Manoj Kumar Patel, Principal Scientist, CSIO



Independence Day celebration at PGSC

progress in the field of science & technology. He urged the youth to think innovatively and find the scientific solutions to the common issues faced by the society in daily life. More than 100 students and teachers from different educational institutions of Punjab participated in the event.



Sh. G.S Rautela Former DG, NCSM

Webinar on 'Science Communication & National Development' (August 14, 2021)

Pushpa Gujral Science City celebrated Azadi ka Amrit Mahotsav by organizing a webinar on Science Communication and National Development. The event was celebrated to commemorate 75 years of progressive India and the glorious history of it's people, culture and achievements. Sh. G.S Rautela Former DG, NCSM was the key speaker at this occasion. Delivering his talk, he said that Public has increasingly become aware of and interested in scientific development such as medicine, climate change, telecom etc. which directly affect them. However, the perception of some that science and technology are harsh and root cause of environmental degradation and other ill effects on our planet, as well as the inadequate science literacy and gap in knowledge of experts and common people still exists. Science communication, therefore, has crucial role of initiating national development efforts by motivating people to embrace science and technology. Dr. Neelima Jerath, Director General, Science City said that science and technology has contributed significantly to the growth of the nation since the past

75 years where scientific research, combined with favourable public policies, has made India self sufficient in several areas and has led it to the path of becoming a globally important country. The COVID-19 pandemic is a drastic reminder of how important it is for science communication to effectively place public interest at the heart of 'how' and 'what' scientific knowledge is produced, shared and applied. Science Centres can play a crucial role in assessing what information audiences are receptive to, what issues they take action on, and what behaviors they may be willing to change while contributing to Atma-nirbhar Bharat. Accordingly the Science , Technology & Innovation Policy, 2020 lays emphasis on communication and innovation, especially in the new and emerging disruptive technologies, like AI, ML and IoT. More than 100 students and teachers from different educational institutions of Punjab participated in the webinar

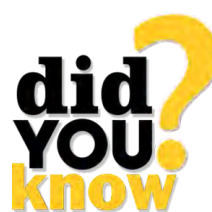
Engineers Day (September 15, 2021)

Pushpa Gujral Science City organized a webinar to celebrate Engineers Day on September 15, 2021. The theme of Engineers Day 2021 was "Engineering for A Healthy Planet". Dr. Mandeep Singh, Associate Professor, Thapar institute of Engineering & Technology was the key speaker. During his talk, he motivated the students to pursue career in Science Technology, Engineering & Mathematics streams.

At this occasion, a presentation on various facilities available at Innovation Hub, PGSC was also shared with the participants. More than 100 students from different Engineering colleges of Punjab participated in the event.



Dr. Mandeep Singh, Associate Professor,
Thapar Institute of Engineering & Technology



Grasshoppers have ears on their stomach

On each side of the first abdominal segment of a Grasshopper, right under the wings, they have membranes that vibrate when they are hit by sound waves.



Workshop on Low Cost Teaching Aids

Low Cost Teaching Aids are an effective tool for teaching pedagogy in Science Communication. It helps to understand various complex scientific principles in an easy way. Pushpa Gujral Science City, Kapurthala in collaboration with NCSTC, Department of Science & Technology, Govt. of India organized four workshops on Low Cost teaching Aids for Government school teachers during July 26-31, 2021. One workshop was conducted from September 6, 2021- September 9, 2021. More than 150 teachers from various districts of Punjab participated in these workshops. Sh. Darshan Lal Baweja from Yamuna Nagar, Sh. Sanjay Kapoor from New Delhi and Sh. Rann Singh from Rohtak were the resource persons.

The participants during the workshops were trained to make easy to use low cost teaching kits in classroom which could help in improving conceptual understanding and promoting creativity amongst the students. The participants showed keen interest in the workshop and also, prepared their own low cost teaching kits demonstrating various scientific principles.



International Literacy Day (September 8, 2021)

International Literacy Day is celebrated to highlight the importance of literacy to individuals, communities and societies. The theme of International Literacy Day 2021 was "Literacy for a human-centered recovery, Narrowing the digital divide." A webinar was organized by PGSC to mark this occasion. Sh. Arul Jerald Parkash.G, former Director, Kerala State of Science & Technology Museum & Priyadarshani Planetarium Thiruvananthapuram was the Key speaker at this occasion. He delivered a special talk on "Role of Science Centres in Scientific Literacy". Dr. Avtar Singh Dhindsa, Principal (Retd.), Department of School Education Punjab delivered a talk on "Scientific Literacy during the Pandemic". He emphasized the importance of Science Technology Engineering & Mathematics (STEM) education to develop the knowledge, skills and identities needed in the fight against COVID-19 and other global health challenges, climate change and more.



Sh. Arul Jerald Parkash.G, former Director, Kerala State of Science & Technology Museum & Priyadarshani Planetarium, Thiruvananthapuram



Dr. Avtar Singh Dhindsa, Principal (Retd.), Department of School Education Punjab

World Ozone Day (September 16, 2021)

To spread awareness among people about the depletion of the Ozone Layer, Pushpa Gujral Science City celebrated World Ozone Day by organizing a webinar on Good Ozone vs Bad Ozone.

Dr. Umesh Chandra Kulshrestha, Professor and Dean, School of Environmental Science, Jawaharlal Nehru University, New Delhi was the key speaker at this occasion.



Dr. Umesh Chandra Kulshrestha

He delivered a special talk on 'Good Ozone and Vs Bad Ozone'. During his talk he informed that Ozone occurs in two layers of the atmosphere. The layer closest to the Earth's surface is the troposphere. Here, ground-level or "bad" ozone is an air pollutant that is harmful to breathe and it damages crops, trees and other vegetation. The stratosphere or "good" ozone layer extends upward from about 6 to 30 miles and protects life on Earth from the sun's harmful ultraviolet (UV) rays. Further, ozone hole which is referred to depletion of good ozone below 220 Dobson Units in the Antarctic region is now healing which means the destruction of ozone via man-made emissions of chlorine and bromine is reduced on account of replacement of chlorofluorocarbons with hydro fluorocarbons (HFCs) in a phased manner.



Online Science Camps

Low Cost Teaching Aids (July 3-4, 2021)

The workshop focused on 'Learning by Doing'. The participants were demonstrated preparation of 'low cost, no cost science material'.

3 D Modelling and Printing (July 5-6, 2021)

3D Printing is an Additive Manufacturing technique that creates a physical object from a virtual 3D CAD model by depositing successive layers of material. They work like the traditional inkjet printers, but instead of ink, a 3D printer deposits desired material to manufacture an object from its digital format. This program on 3D Printing helps the participants understand the design, functioning and operation of a basic 3D Printer.

Internet of Things (July 7-8, 2021)

The participants were introduced to exciting world of IoT. The workshop focused on understating IoT Technology, History of IoT, its applications, IoT Standards and different requirements for implementation.

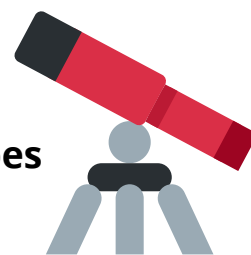
Exploring the Night Sky with Telescopes (July 9-10, 2021)

The training programme highlighted the identification of the different planets in the solar system, like Mercury, Venus, Mars, Jupiter, Saturn. The participants learned how telescope optics work, and were introduced to the features present in modern telescopes and how these aid in finding and viewing objects in the night sky.



Nature Camp (July 26-29, 2021)

The training covered topics like, Ecology and ecosystem, energy flow and ecosystem, Natural resources and their conservation, nutrient cycle, Environmental Pollution (air,water,soil,etc.), Global Environmental Issues, Biodiversity and its conservation, Solid Waste Management, Sustainable Development, Environmental Impact Assessment, Environment, Constitution of India and Environmental Laws.



From the Innovation Hub

Workshop on Arduino Micro Controller (July 1-2, 2021)

The participants learnt what an Arduino is and how it works. They got familiar with various development boards of Arduino and learnt the development environment for Arduino. Working with Arduino I/ O pin was taught and functions of various embedded components were explained. Application of Arduino like blinking LED and its coding was also explained. The participants got to know how to use an Arduino with various electronic sensors like LDR and Ultrasonic sensors in project development.

Workshop on Automate your home (July 11 & 12, 2021)

Two Workshops on home automation were conducted on 11 & 12 July, 2021. The participants learnt about designing of electronic automation based circuits like automatic switching on/off of lights using PIR & LDR sensor. Students developed their own sensor based circuits through online circuit designing software.

Workshop on Robotics and its application (July 31, 2021)

The participants learnt fundamental concept of Robotics & practical application. In the first session students got familiar with the term Robot, how to identify whether a machine is a Robot or an autonomous bot. Informative videos of Various Robots were shown to students. Live demo on making the "Obstacle detecting Robot" was made. Explanation about connections of motor drivers L293D to Arduino and motors of Robot chassis was also explained.

Workshop on Food adulteration (August 12, 2021)

The participants were taught various techniques to check adulteration in various food items like honey, milk, desi ghee, red chilli, tea, etc. that are commonly used in homes.



Workshop on Shadow art (August 30 - September 1, 2021)

A three-day workshop on Shadow art was organized. Sh. Subhasis Guha Neogi (Nek Chand Excellence Awardee), President PNA-The Puppet Theatre, Chandigarh, was the resource person. The workshop was attended by 41 students. The participants explored different types of lights & shadows with 2-D and 3-D paper cut outs and shadow puppets. They also created various puppets like dinosaurs, butterflies, buildings, etc.



Workshop on Electronic circuit designing (Sep 27, 2021)

The participants were introduced to basic electronics and working of components like transistor, capacitor and relay modules. Circuit designing using software and soldering techniques were demonstrated during the workshop.

Women Technology Park



Empowerment of Rural Women through Science based skill development' is an initiative taken by PUSHPA GUJARAL SCIENCE CITY in collaboration with SEED Division, Department of Science & Technology, GoI to empower the women in rural areas. The project aims at ensuring that the benefits of science and technology percolate to rural women of the surrounding villages and provide them skill training and incubation facility to earn their own livelihood in a dignified manner. The project offers long term and short term training to the rural women in Mushroom Cultivation (with special focus on *Pleurotus sajor caju*), Preparation of Cow Dung Logs & Pots and Value Addition to textiles (Hand Block Printing and Computer Assisted Embroidery).

During the past quarter, 15 women were trained in Milky Mushroom cultivation, 15 women were trained in Block printing, 36 women were trained in preparation of cow dung logs and pots and orientation sessions in 9 villages were organized with participation of 103 women. The WTP team also participated in an exhibition organized by KVK, Kapurthala and showcased products made by the incubatees.



Harjot Singh



Manvir Singh



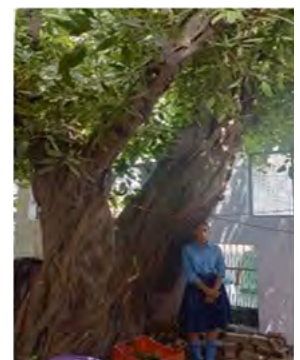
Manraj



Bhawdeep Kaur



Yashkaran Rattu



Kashish Dhillon

Our Winners

Winners of Plant 'Native Tree' Species Contest

1st Prize : Harjot Singh, St Avtar Singh Yadgiri Sr. Sec. School; Siche wali

2nd Prize : Manvir Singh, DAV Model High School, Kapurthala

3rd Prize : Manraj, DAV Model High School, Kapurthala

Appreciation:

Vanshika Thakur, St. Soldier Divine Public School, Jalandhar

Winners of Heritage Tree Contest

1st Prize : Bhawdeep Kaur, Spring Dale Sr. Sec. School, Amritsar

2nd Prize: Yashkaran Rattu, Devi Sahai SD Sr. Sec. School, Jalandhar & Bhumi ka Class, Arya Model Senior Secondary School, Phagwara

3rd Prize: Kashish Dhillon, DIPS, Rayya, Amritsar

Appreciation:

Nidhish Jakhu, Dayanand Model School, Dayanand Nagar, Jalandhar

Archana Sekhri, DAV Model High School, Kapurthala

Essay Writing Competition on 'Swatantrata ka Amrit Mahotsav'

1st Prize: Shruti, Saarthak Government Integrated Model senior Secondary, Panchkula.

2nd Prize: Gurjasveer Singh Varai ch, Govt. High School, Bhotna Barnala.

3rd prize: Yuvraj Singh, Army Public School Unchi Bassi, Hoshiarpur.

Appreciation:

Dharampreet Singh, St. Soldier Divine Public School Jalandhar.

Gurdeep Singh, Govt. School, Kambwala, Ferozpur.

Bookings

Ticket	Discounted Children /Student/Teacher	Adult	Family (2 Adult + 2 Children)
Entry Ticket	105*	155*	470**
Package Ticket(Entry to galleries, Large Format Theatre or Digital Planetarium, Laser Show,3D Show, Climate Change Theatre)	265 *	355*	1120**
Package Ticket > 25 Group	255*	345*	1070**
Complete Package Ticket [Digital Planetarium or Large Format Film(Any one), Flight Simulator, Earth Quake Simulator, Laser Show, 3D Show, Climate Change Theatre, Galleries& Exhibits]	305*	425*	1320**
Complete Package Ticket > 25 Group	285*	405*	1270**

Discounts

Minimum 500 students	10% on prevailing ticket rates
Between 501 and 1000 students	12.5% on prevailing ticket rates
Above 1000 students	15% on prevailing ticket rates

Note: *includes Food coupon worth Rs 20/-

**** includes food coupon of Rs.80/-**

Annual Ticket Charges

You can visit PGSC any no. of time within one year of purchase of Annual Ticket. The cost of ticket is recovered in less than three visits. The Annual ticket rates are:

Student / Teacher: Rs 570/-
Adults: Rs 820/-
Orphans/ Handicapped / BPL Students: 290/-
Family (2 Adults + 2 Children (<18 yrs)): Rs 2500/-
Senior Citizens / Handicapped / BPL Adult member: 415/-

To know about membership benefits, please contact:
Dr. Munish Soin, Scientist C; M: 8146580387

HOSTEL FACILITY FOR STUDENTS/TEACHERS

AC accommodation for 100 students and 10 teachers is available. Separate arrangement for boys and girls.
Stay charges: Rs 150/- per person (Food charges extra).For hostel booking, contact: Mrs Harsimran Arora; Phone: 01822-501963, 501964

NIGHT SKY WATCHING

Weather permitting, Science City provides Night Sky Watching facility when clear sky offers best view of the planets. Students/ Teachers: Rs 30/- , Adult: 50/-. Science City also provides Night Sky watching facility on demand of educational institutions at their own premises. Student / Teachers : Rs. 50/-. For more details & reservations, please contact: Ms. Kanika Sharma ; Mobile: 98837897789

BUSINESS OPPORTUNITIES

Register yourself as a Tour Operator or Be our Sponsors. For More Information, Please Contact: Sh. Sheeraj Batish (DGM, Mktng & PR) @ 998847443 or sheeraj_batish@hotmail.com



Director: Dr. Rajesh Grover
Resident Editor: Sh. Sheeraj Batish, DGM (Mktng & PR)
Editor: Dr Loveleen Brar (Scientist B)