

GREAT INDIAN SCIENTIST

Prasanta Chandra Mahalanobis (1893-1972)



Prasanta Chandra Mahalanobis (June 29, 1893- June 28, 1972) was an Indian scientist and applied statistician. He is best known for the Mahalanobis distance, a statistical measure. He did pioneering work on anthropometric variation in India. He founded the Indian Statistical Institute, and contributed to large scale sample surveys. His father, Prabodh Chandra, was an active member of the Sadharan Brahmo Samaj. His mother, Nirodbasini, belonged to a family of considerable academic achievements. He graduated in Physics in 1912 from the

Presidency College, Kolkata and completed Tripos at King's College, Cambridge. He then returned to Calcutta. Inspired by the Biometrika and mentored by Acharya Brajendranath Seal he started his statistical work. Initially he worked on analyzing university exam results, anthropometric measurements on Anglo-Indians of Calcutta and some metrological problems. He also worked as a meteorologist for some time. In 1924, when he was working on the probable error of results of agricultural experiments, he met Ronald Fisher, with whom he established a life-long friendship. He also worked on schemes to prevent floods. His most important contributions are related to large scale sample surveys. He introduced the concept of pilot surveys and advocated the usefulness of sampling methods. His name is also associated with the scale free multivariate distance measure, the Mahalanobis distance. He founded the Indian Statistical Institute on 17 December, 1931. In later life, he contributed prominently to newly independent India's five-year plans starting from the second. His variant of Wassily Leontief's Input-output model was employed in the second and later plans to work towards rapid industrialisation of India and with his colleagues at his institute, he played a key role in developing the required statistical infrastructure. He also had an abiding interest in cultural pursuits and served as secretary to Rabindranath Tagore, particularly during the latter's foreign travels, and also his alma mater Visva Bharati University, for some time. He received one of the highest civilian awards Padma Vibhushan from the Government of India for his contribution to science and services to the country. He died on Jun 28, 1972, a day before his seventy-ninth birthday. Even at this age, he was still active doing research work and discharging his duties as the Secretary and Director of the Indian Statistical Institute and as the Honorary Statistical Advisor to the Cabinet of the Government of India. He had got Weldon Medal from Oxford University in 1944 and Padma Vibhushan in 1968. He was also elected a fellow of the Royal Society, London in 1945 and Honorary President of International Statistical Institute in 1957.

PUZZLE CORNER**Try this**

Two bananas weigh as much as one apple. One apple weighs as much as five cherries and a banana. How many cherries weigh as much as one apple?

Answer of quiz : No. 5 Vol. 01

1. white dwarf
2. Staphylococcus aureus
3. United Kingdom
4. Nectar

MAJOR ATTRACTIONS**Underwater Exploration:**

The interactive exhibits, large marine and sweet water live aquaria, video display, multimedia games and scenic recreations in this gallery not only explain the concepts of under water phenomena, but also enlighten us with the vast resources held there in terms of food, minerals, energy, medicine transport etc.

Biotechnological Revolution:

The exhibits in this gallery will take you to a journey from human gene to cracking

of genetic code and to biotechnological applications and emerging trends. We have been using the beneficial aspects of biotechnology in our everyday life.

Being Human:

The 'Being Human' gallery presents a unique and fascinating view of the science of social behavior. Indeed, human mind is an amazing world of mysteries. Understanding human behavior is a perfect blend of work of the scientists from the world of biology and social psychology.

SCIMAX:

SCIMAX is state of the art technology and it first of its kind in the state of U.P. It is a thrilling experience of unparalleled nature. One can watch large images on the hemispherical dome screen accompanied by the digital surround sound system to get memorable experience. SCIMAX is indeed an experience of world-class education & entertainment.

3-D Science Show:

Experience another unique facility of viewing 3-D images here using a stereo back hi definition projection system and specially aligned polarized spectacles.

Prehistoric Life Park:

The newly developed Prehistoric Life Park at Regional Science City, Lucknow shall take you on a journey of Prehistory. It is a recreated world of living creatures which evolved on earth. They are no more present neither any body has ever seen them but they are brought alive in this Prehistoric Life Park. The robotic movement of the dinosaurs with audio commentary creates a perfect ambience to know the life forms of ancient eras. Some of the fossils as old as 65 million of years are also on display in the park.

Fun Science Gallery:

The biggest and unique exhibit of the gallery is "Aquamobile", where we can see different principle of science through flowing water, stringless piano, Deceptive Reality, Walking Ghost, Electronic Organ, Breathing Square are the other attractions of the gallery.

Fluidics Gallery:

In Fluidics Gallery working and participatory exhibits bring alive the science & technology of fluid like Air Water Interplay, Magic Tap, Ripple Tank & Vortex etc.

Ganga: The Story of Water:

The gallery on 'Ganga' gives vast knowledge on rich scientific heritage of India with lots of information on water & its conservation.

Popular Science:

Wonders of light, sound, Magnetism, Heat and many other topics explained through participating exhibits.

Children Gallery: Meri Anokhi Duniya

Colourful exhibits are presented in such a way that the children can interact and participate with their own hands on "do it yourself" basis by logical thinking.

Science Park:

Various participatory exhibits are installed in sprawling Green Park where visitors learn through play and natural habitat unfolds itself in all its beauty and fragrance.

GENERAL INFORMATION

General Information
Open on all days
Daily 10:00 AM to 5:30 PM
Except Holi & Deepawali

For General Visitors

Entrance Fee : ₹ 15/- per head
SCIMAX : ₹ 30/- per head
3-D Science Show : ₹ 10/- per head
Special Package : ₹ 50/- per head
(Entrance + SCIMAX + 3-D Science Show)

For Organized Student Group

Entrance Fee : ₹ 10/- per head
SCIMAX : ₹ 20/- per head
3-D Science Show : ₹ 05/- per head
Special Package : ₹ 30/- per head
(Entrance + SCIMAX + 3-D Science Show)
(Special Shows of SDL and Taramandal are conducted on request)



REGIONAL SCIENCE CITY
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No. 5 Vol. 2

RSCL NEWS

A News Letter
from
Regional Science City

Aliganj, Lucknow, U.P.



July - September 2011

FROM THE DESK OF PROJECT COORDINATOR**Dear Friends,**

The last quarter was quite eventful for Regional Science City. The center celebrated its Anniversary during 7th to 21st September 2011 by organising a number of educational



Distinguished Guests during the Inauguration of New Scimax Film "The Mystery of Nile"

activities such as collage making contest, exhibit hunt, computer awareness program, fun festival, water rocket workshop, face painting & popular science lecture etc.

World Ozone Day was also celebrated on 16th September 2011 in association with Directorate of Environment U.P. A new Scimax show on "The Mystery of Nile" was opened for public on 19th July 2011 by Sri Rajneesh Gupta, Secretary Deptt. of Science and Technology and Director General, Council of Science and Technology U.P. in presence of Dr. N. C. Mehrotra, Director Birbal Sahani Institute of Paleobotany and Chairman, Local Advisor Committee of Regional Science City, Lucknow

Besides this, Regional Science City, Lucknow in collaboration with Council of Science & Technology, UP started Mobile Science Exhibition for students of government schools of Uttar Pradesh. Mobile Science Exhibition will cover various districts of Uttar Pradesh like Kanpur Nagar, Kanpur Dehat/Ramabai Nagar, Auriya, Etawah, Mainpuri, Firozabad, Agra, Mathura, Maha Maya Nagar, Etah, Kannauj, Jalaun, Hamirpur, Mahoba, Jhansi, Lalitpur, Fatehpur and Kaushabi till March, 2011. During the programme MSE bus will cover about 80 schools of the above districts and about 2.5 to 3 lacs students, teachers and general public will be benefitted.

S. Kumar

Project Coordinator

INSIDE

Calendar of Forthcoming Events
Events of the Previous Quarter
Amazing Facts
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CALENDAR OF FORTHCOMING EVENTS

Month	Event	Date
October 2011	Wild Life Week Celebration	01.10.2011 to 07.10.2011
	Environment and Wild Life Film Festival	17.10.2011 to 21.10.2011
	Teacher Training Programme	III rd Week of October, 2011
November 2011	City Level Science Drama	05.11.2011
	World Science Day	10.11.2011
	Olympiad Examination	27.11.2011
December 2011	City Level Science Fair	08.12.2011 to 09.12.2011
	CAC Programme	20.12.2011 to 25.12.2011

INTERESTING TO KNOW**How does a pole vaulter gains extra ordinary height?**

To put it simply, the pole vaulter uses the length of the pole to catapult him to astonishing height. Now, let us see what the components of this action are.

First, the run up. Here the athlete builds up kinetic energy and horizontal motion. As the athlete digs the pole in, his / her horizontal motion makes the pole swing along an arc which converts part of his/her horizontal motion into vertical motion. Additionally, the elasticity of the pole causes it to bend backwards with the weight of the athlete and while straightening up, catapults him/her across the bar. Of course, the skill of the pole-vaulter determines the final result.

EVENTS HELD DURING JULY TO SEPTEMBER 2011**विज्ञान फिल्म महोत्सव का आयोजन**

आंचलिक विज्ञान नगरी द्वारा 8 से 30 जुलाई 2011 के मध्य विज्ञान



विज्ञान फिल्म महोत्सव के दौरान प्रतिभागी विद्यार्थी

फिल्म महोत्सव का आयोजन किया गया। इस कार्यक्रम में विद्यार्थियों को वातावरण, वन्य जीव, जलीय वातावरण इत्यादि विषयों पर रोचक एवं ज्ञान वर्धक फिल्में दिखायी गईं। इस कार्यक्रम में लगभग 2500 विद्यार्थियों ने भाग लिया।

नवीन साइमैक्स प्रदर्शन का उद्घाटन

आंचलिक विज्ञान नगरी के साइमैक्स हाल में दिनांक 19 जुलाई, 2011 को



उद्घाटन समारोह के दौरान मुख्य अतिथि एवं अन्य अतिथिगण

“नील नदी का रहस्य” नामक नवीन साइमैक्स शो का उद्घाटन श्री रजनीश गुप्ता, सचिव, विज्ञान एवं प्रौद्योगिकी, उत्तर प्रदेश शासन एवं महानिदेशक, विज्ञान एवं प्रौद्योगिकी परिषद, उ०प्र० के द्वारा किया गया। इस अवसर पर डा. एन.सी. मेहरोत्रा, निदेशक, बीरबल साहनी पुरावनस्पति विज्ञान संस्थान, लखनऊ व अध्यक्ष, स्थानीय सलाहकार समिति, आंचलिक विज्ञान नगरी, लखनऊ, डा० एम०जे०के० सिद्धीकी, निदेशक, विज्ञान एवं प्रौद्योगिकी परिषद, उ०प्र०, डा० पी०के० सेट, मुख्य कार्यकारी अधिकारी, बॉयोटेक पार्क, डा. सी. एम. नौटियाल, वैज्ञानिक, बीरबल साहनी पुरावनस्पति विज्ञान संस्थान, लखनऊ एवं सदस्य, स्थानीय सलाहकार समिति, आंचलिक विज्ञान नगरी के अतिरिक्त बड़ी संख्या में विभिन्न गणमान्य अतिथि, विद्यार्थी एवं अध्यापक उपस्थित थे।

वर्षा मंगल उत्सव समारोह

INTACH प्रदेश एवं लखनऊ चैप्टर, क्लब ऑफ लखनऊ, भातखण्ड



समारोह के दौरान अतिथिगण एवं प्रतिभागी

संगीत संस्थान समविश्वविद्यालय, ललित कला अकादमी (क्षेत्रीय केन्द्र) एवं आंचलिक विज्ञान नगरी, लखनऊ द्वारा 7 अगस्त, 2011 को वर्षा ऋतु के स्वागत और वृक्षारोपण के लिए एक अनूठा ‘वर्षा मंगल उत्सव’ का आयोजन विज्ञान नगरी के परिसर में किया गया। कार्यक्रम की शुरुआत, ललित कला अकादमी से आंचलिक विज्ञान नगरी, लखनऊ तक के लिए एक नृत्य शोभा यात्रा से हुई। शांति निकेतन की परंपरा का पालन करते हुए, एक विशेष पेड़ छतिम (सप्तपर्णी) या सात पत्तियों वाले पेड़ को पालकी से आंचलिक विज्ञान नगरी लखनऊ लाकर वृक्षारोपण किया गया।

शिक्षक प्रशिक्षण कार्यक्रम

आंचलिक विज्ञान नगरी लखनऊ में 8 से 12 अगस्त, 2011 के मध्य शिक्षक प्रशिक्षण कार्यक्रम का आयोजन किया गया। इस कार्यक्रम में ईसाबेला थोबर्न



प्रशिक्षण कार्यक्रम में मॉडल बनाती हुई छात्रायें

कालेज, लखनऊ की 22 बी.एड. छात्रायें ने भाग लिया। इस कार्यक्रम के अंतर्गत छात्रायें को अध्ययन सामग्री को अधिक सरल एवं रोचक बनाने के लिए मॉडल बनाने का प्रशिक्षण दिया गया।

लोकप्रिय विज्ञान व्याख्यान का आयोजन

आंचलिक विज्ञान नगरी, लखनऊ में 6 सितम्बर, 2011 को उपास्ता



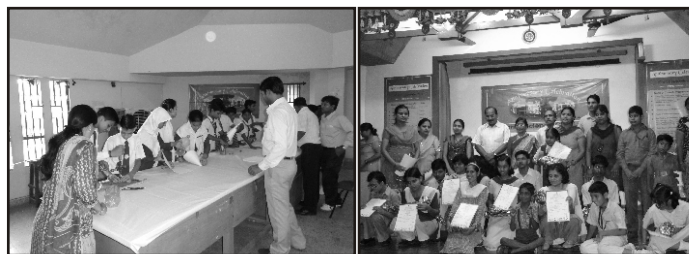
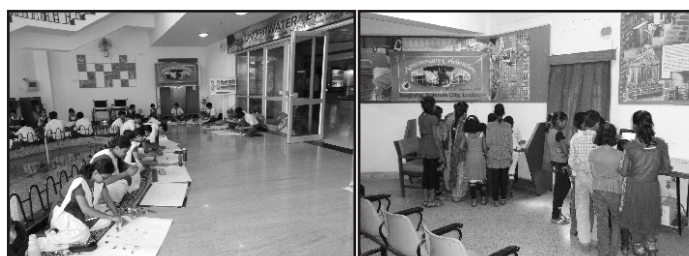
लोकप्रिय विज्ञान व्याख्यान देते हुए प्रो० मनोज कुमार मिश्रा

(उ०प्र० एसोशियेशन फार साइंस एण्ड टेक्नोलॉजी एडवांसमेंट) के सहयोग से “फोटोडायनेमिक कंट्रोल ऑफ सेलेक्टिव बॉण्ड डिसोसिएशन” विषय पर प्रोफेसर मनोज कुमार मिश्रा, कुलपति, लखनऊ विश्व विद्यालय द्वारा एक लोकप्रिय विज्ञान व्याख्यान दिया गया। इस अवसर पर स्नातक

स्तर के लगभग 60 विद्यार्थी उपस्थित थे।

आंचलिक विज्ञान नगरी का वार्षिकोत्सव समारोह

आंचलिक विज्ञान नगरी, लखनऊ के वार्षिकोत्सव समारोह के उपलक्ष्य में



समारोह के दौरान प्रतिभागी विद्यार्थी एवं विजयी प्रतिभागी

दिनांक 7 से 21 सितम्बर, 2011 तक विद्यार्थियों के लिए विभिन्न शैक्षणिक प्रतियोगिताओं का आयोजन किया गया जैसे कि विद्यार्थियों एवं अध्यापकों के लिए विज्ञान फिल्मोत्सव “दैनिक जीवन में रसायन विज्ञान” विषय पर कोलाज प्रतियोगिता, प्रदर्श खोज प्रतियोगिता, मलिन बस्ती के बच्चों के लिए कम्प्यूटर जागरूकता कार्यक्रम, बहुआयामी बच्चों के लिए फन फेस्टिवल, वाटर रॉकेट प्रदर्शन एवं क्रियात्मक कार्यशाला, “वातावरण एवं वन्य जीव”

विषय पर फेस पेंटिंग आदि कार्यक्रम व प्रतियोगिताओं का आयोजन किया गया। इस अवसर पर आयोजित विभिन्न प्रतियोगिताओं तथा कार्यक्रमों में विभिन्न विद्यालयों के लगभग 1000 विद्यार्थियों ने उत्साहपूर्वक भाग लिया। समापन समारोह के अवसर पर प्रो० सुधा जैन, प्रोफेसर, रसायन विज्ञान विभाग, लखनऊ विश्व विद्यालय द्वारा “दैनिक जीवन में रसायन विज्ञान” विषय पर एक लोकप्रिय विज्ञान व्याख्यान दिया गया जो कि समापन समारोह की मुख्य अतिथि भी थी।

‘अंतर्राष्ट्रीय ओजोन परत संरक्षण दिवस का आयोजन’

पर्यावरण निदेशालय, उ०प्र० के सहयोग से “अन्तर्राष्ट्रीय ओजोन परत

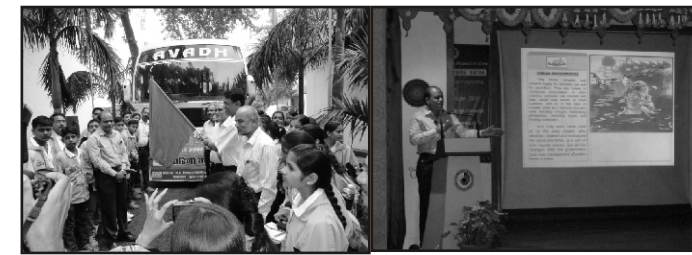


समारोह के दौरान प्रतिभागी विद्यार्थी एवं विजयी प्रतिभागी

संरक्षण दिवस” का आयोजन दिनांक 16 एवं 28 सितम्बर, 2011 को आंचलिक विज्ञान नगरी, लखनऊ के प्रांगण में किया गया। इस कार्यक्रम के अंतर्गत राज्य स्तरीय संगोष्ठी, चित्रकला प्रतियोगिता, एकांकी नाटक, खेल/पहेली प्रतियोगिता, प्रश्नोत्तरी एवं विज्ञान फिल्म प्रदर्शन का आयोजन किया गया। इस अवसर पर लखनऊ के विभिन्न विद्यालयों के 220 विद्यार्थियों ने भाग लिया। इस अवसर पर डा० सी.एम. नौटियाल, वैज्ञानिक बीरबल साहनी, पुरावनस्पति विज्ञान संस्थान, लखनऊ, द्वारा “ओजोन परत क्षरण : चेतावनी संकेत” विषय पर एक लोकप्रिय विज्ञान व्याख्यान दिया गया। इस कार्यक्रम में लगभग 400 विद्यार्थियों ने उत्साहपूर्वक भाग लिया।

विज्ञान मंथन यात्रा

आंचलिक विज्ञान नगरी में दिनांक 25 सितम्बर, 2011 को मध्य प्रदेश के मेधावी छात्रों के लिए ‘विज्ञान मंथन यात्रा’ का शुभारम्भ प्रो० मनोज कुमार



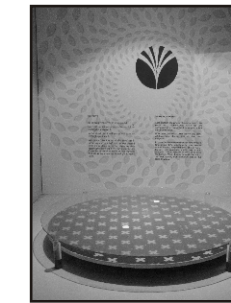
हरी झंडी दिखाकर यात्रा का शुभारम्भ करते हुए प्रो. मनोज कुमार मिश्रा

लोकप्रिय विज्ञान व्याख्यान के दौरान डा. पी० के० श्रीवास्तव

मिश्रा, कुलपति लखनऊ विश्वविद्यालय द्वारा किया गया। इस अवसर पर डा० आर०के० अवस्थी एवं डा० पी०के० श्रीवास्तव द्वारा क्रमशः “आपदा प्रबंधन” एवं “जैव विविधता” विषय पर लोकप्रिय विज्ञान व्याख्यान भी दिया गया। इस अवसर पर कई वैज्ञानिक जैसे डा. एन.एन. मेहरोत्रा, पूर्व वैज्ञानिक केन्द्रीय औषधि अनुसंधान संस्थान, लखनऊ एवं डा. राजेश शर्मा, वरिष्ठ संसाधन वैज्ञानिक, विज्ञान एवं प्रौद्योगिकी परिषद, मध्य प्रदेश आदि उपस्थित थे। इस यात्रा में मध्य प्रदेश के 125 मेधावी विद्यार्थी एवं 15 शिक्षकों ने भाग लिया था।

EXHIBIT NOT TO MISS

Spinning Eraser



Look intentionally at anyone of the colour dots on the glass disc. Even through you are concentrating on any one of the dots, you can notice the other dots also. Now press the switch. The bottom disc starts rotating. Now observe that all other dots disappearing from your vision.

In our retina there are two types of sensory cells. One sense static objects other type. Senses motions on the peripheral area of the retina sensory cells registering motion are in more in number. This is because of our self defense mechanism. When the background crosses start moving background & the stationary dots disappears.

SCIENCE NEWS

● A protein normally found in breast milk has emerged as a potent weapon against cancer. Human alpha lactalbumin is a relatively small protein consisting of 123 amino acids, has a molecular weight of 14.2kDa, and is expressed in the lactating mammary glands; HAMLET is a molecular complex of partially unfolded human alpha lactalbumin. It has been previously shown that breast fed children show lower incidence of childhood cancers and childhood tumors are about two folds less prevalent in them than in bottle fed children.

● Scientists have known for some time that clonal (regenerate) organisms are not always identical: their observable characteristic and traits can vary, and this variation can be passed on to the next generation. A new study of plants has shown why cloned plants are not identical: the genome of regenerate plants carry relatively high frequencies of new DNA sequence mutations that were not present in the genome of the donor plant.

AMAZING FACTS

Do you know?

- Humans can distinguish over 1,500 musical tones.
- The heart pumps about 13,640 liters of blood per day.
- Neurons cannot multiply and divide like other cells.

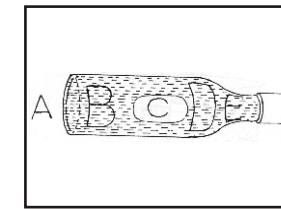
CREATIVITY CORNER

HOME MADE MAGNIFYING GLASS

Things required:

A clean, dry clear (preferably narrow) glass bottle and water

Method:



1. Fill water up to brim and then screw the bottle cap.
2. Let the bottle lie horizontally. Make sure no water leaks out.
3. In the horizontal position you will notice that a big air bubble can be seen which moves from left to right if the bottle is moved around.

4. Keeps the bottle on any reading material with fine prints (like a news paper)?
5. You will notice that every letter gets magnified many times.
6. Now look at the printed words through air bubble. Every letter seems to shrink.
7. Also look at your palm through water.

What actually happens?

The bottle, filled with water, acts as convex (cylindrical) lens (thick in the middle). When it is held against the text, the words look bigger because the bottle lens bends the rays of light inward. Your eyes trace the light rays back in straight lines and see a virtual image that appears larger.