



103rd Indian Science Congress 2016

ISC NEWSLETTER

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Cultural event at 103rd ISC at University of Mysore, Mysuru
P. Madhu

Cell Replacement calls for Discretion of Patients: John C Gurdon

-Shreeharsha C M

Mysuru: Cell replacement will be useful if the humans can function with lesser number of cells, and the single type of cells could be replaced. However, the law in several countries has not regulated the issues surrounding the cell



Prof K S Rangappa, Vice Chancellor, University of Mysore felicitated Prof John B Gurdon. Prof Ramachandra local secretary ISC, looks on

Photo-Shreeharsha C M

replacement said, Nobel laureate scientist from UK, Dr. John B Gurdon while delivering Nobel laureate lecture series as part of the 103rd Indian Science Congress at University of Mysore, Mysuru. While pondering over the vital issue of who should decide to undergo cell replacement, Prof. Gurdon suggested that instead of lawyers, priests and politicians having their say on this issue it should be left to the patient himself as it is a life saving process.

liver is the only human organ which can be regenerated evoked his interest in science and as early as 600 BC people knew about the organ transplantation, said Prof. Gurdon.

Dwelling upon the issue of transplantation Prof. Gurdon said, single nucleus transfer to an unfertilized egg was the first cloning effort for a frog. If it is not done with all the care, the embryo will not develop. Tadpoles are generated by the

(Continued in p.4...)

Cloud Computing: Panacea for Big Data Problem

-Shrithi Joyappa K & Mallikarjun

Mysuru: With 2.5 quintillion bytes (exabytes > 10¹⁸ bytes) created every day, data storage and analysis has become a great challenge. Cloud computing can be the solution to big data problem, said Dr. A. K. Mishra, Senior Scientist and Coordinator, BIC, New Delhi addressing "Big Data and Cloud Computing in Agri-Bioinformatics" in the plenary talk session of 103rd Indian Science Congress hosted by the University of Mysore, Mysuru.

Cloud computing is very important in big data analytics due to its application sharing and cost effective properties. This technology will help in current genomic data storage and analysis. To head towards sustainable livelihood and development such analyses with respect to agriculture including plants and animals are crucial he said. 90% of the data in the world today has been created in the last two years alone, he explained.

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The Higher Rate of Fungal Infections is an Alarming Sign: Dr. Chakrabarti

-Shreeharsha C M

Mysuru: "Initially it was reptiles and other beings which were more prone to fungal infections but, along with the passage of time, human beings have become more prone to higher fungal infections" said renowned medicinal scientist, Dr. Arunaloke Chakrabarti speaking in the BIMS auditorium, in the 103rd Indian Science Congress at University of Mysore, Mysuru.

Dr. Chakrabarti drew attention to point that, when we compare India to other countries, USA has a rate of 0.8 cases of fungal infection per thousand where India has a rate of 12 per thousand population. He remarked that, Indians are not keen to identify these infections and are lethargic to go for medication for the



Dr. Arunaloke Chakrabarti addressing the session on Fungal Infections at 103rd Indian Science Congress at University of Mysore

Photo-Shreeharsha C M

infections. He called upon to use the advanced Science and Technology in diagnosis of these infections which are easy and accurate. Dr. Chakrabarti observed that, Indians are fond of sweets and are unaware of the fungal infections other than diabetes.

When Compared with bacterial infections, fungal diseases are difficult to cure. This requires the diagnoses of the disease at the early stages, he said. Another highly encountered fungal disease is, *Rhinosutis* which is found in the region of glaciers. A study done last year shows it is as harmful as HIV/ AIDS in causing problems he added.

He lamented that, the study in this area are expensive but the laboratories in India are very limited. We are at the juncture where it is important to spread awareness and make people to know about the fungal diseases, he opined.

Dr. Gangadhar and Dr. Ramakrishna were present.

Male Infertility has Solutions: Prof. Simoni

-Shreeharsha C M, Abhilash S D

Mysuru: "One third of the infertility in the world is due to the male reproductive problems. Follicle Stimulating Hormone (FSH) can be used to induce fertility in hypogonadotropic hypogonadism and in male idiopathic



Prof. Manuela Simoni speaking on Advances in Male Reproduction

Photo-Shreeharsha C M

infertility" said Prof Manuela Simoni of University of Modena and Reggio Emilia, Italy addressing the session on 'Recent Advances in Male Reproduction' as part of 103rd Indian Science Congress at University of Mysore, Mysuru.

Prof. Manuela referring to her study said that, "FSH treatment can improve male fertility in selected cases. Idiopathic infertility in males caused by

DNA fragmentation can be treated by FSH treatment. We have recently reviewed the pharmacogenetic potential of FSH for male idiopathic infertility and the study shows that FSH treatment induces male fertility significantly" added Manuela. Speaking on this occasion, Dr C V Rao, of

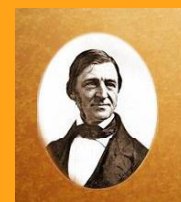
Florida International University gave insight into "Luteinizing Hormone (LH) which is released from pituitary gland that is required for reproductive competence in both the genders. The LH stimulation therapy is an effective way of treating infertility" he said. Dr. C V Rao added that, LH can directly regulate male and female reproduction tract functions.

(Continued in p.4...)



'I was happy to see large number of youngsters showing interest in science in India. Science gives very substantial opportunities for youngsters. Even help them financially.'

Prof. John B Gurdon, at 103rd Indian Science Congress, Organised by University of Mysore, Mysuru



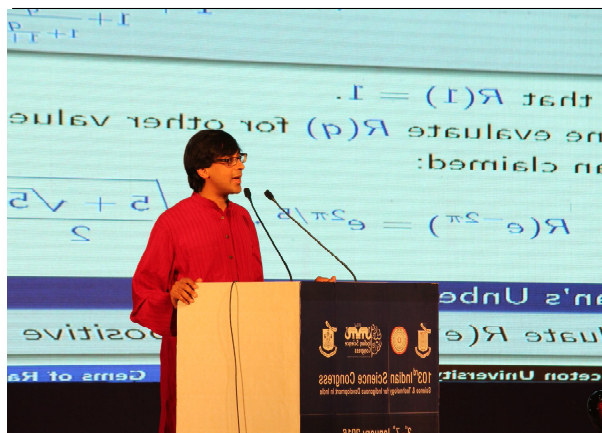
Man Love to Wonder,
and That is the Need of
Science

Ralph Waldo Emerson
American Essayist and Poet

Manjul Bhargava evokes Memories of Genius Ramanujan

-Shivendra G Urs

Mysuru: Everyone knows who Ramanujan is but most fail to come up with a convincing reply when asked about what they know about Ramanujan's life and his contribution to the field of Mathematics remarked, Prof Manjul Bhargava, as part of the Fields Medalist talk as part of 103rd Indian Science Congress at University of Mysore, Mysuru. Prof Bhargava resurrected Ramanujan with his eloquent presentation on "The Gems of Ramanujan and their Lasting Impact On Mathematics" and introduced audience to a movie made on Ramanujan and invoked their curiosity by showing the trailer of the movie made on Ramanujan 'The Man Who Knew Infinity'.



Fields medallist winner Prof. Manjul Bhargava Addressing the gathering on the occasion of 103rd Indian Science Congress at University of Mysore, Mysuru

Photo-Shivendra G Urs

Dwelling on Ramanujan's passion for mathematics he narrated the hardship faced by the genius during his life and how he failed in most of the subjects as mathematics had been Ramanujan's obsession. Prof Bhargava said talent could

be anywhere and everywhere, talent cuts across caste and creed. Someone coming from a humble background can exude talent. It is our responsibility identify such talents and bring them to the forefront and encourage them, he said. Prof. Bhargava showed the rare documents about Ramanujan's hand written images of his formulas and also letters written to GH Hardy to the delight of the audience.

On this occasion he spoke about the connect between art and science. Being a tabla player himself, Prof Bhargava stressed how important it was for a person who belongs to the field of science to be involved in any art form as it will help foster creativity to a large extent.

Prof . K S Rangappa, chaired the session.

Link Science with Society: Dr V K Saraswat

-Shreeharsha C M

Mysuru: The societal transformation is taking place at a faster rate, so is the scientific advancement. It is the need of the hour to link Science with the society in a better way said Dr V K Saraswat, Member of Niti Ayog, Science and Technology wing while speaking at 103rd Indian Science Congress at University of Mysore on Government's Viewpoints on Science & Technology.

Speaking on 'Government's Viewpoints on Science & Technology',



Member of the Niti Ayog Dr V K Saraswat speaking at 103rd Indian Science Congress

Photo-Shreeharsha C M

Dr. Saraswat lauded the government's endeavours to promote Science and Technology in India. He felt that programmes like Swatch Bharat, Digital India, Make in India, Startup India and stand up India will secure the future. Dr. Saraswat stressed the importance of the international collaboration for energy revolution, food for all and making sustainable urban living.

Comparatively Indian agriculture gives better dividends than other countries. The scientific intervention in agriculture will yield better results in India said Dr Aiyappa, representing the Agricultural department.

a greater priority. The life expectancy of Indians is still not high compared to other developing countries, she opined.

The National Supercomputing mission is planned with a huge budget of Rs.4500 crore in the next 7 years said Mr. Ashutosh Sharma from the Department of Science and Technology. He also drew the attention towards increasing electronic waste. Representatives of R&D department, Atomic Energy Department, Department of Environment were present in the session.

Cell Replacement

Continued from p.1....

transplantations of nucleus and the cloning frog will be generated. But the success rate cannot be guaranteed. Elaborating on the subject he said, nearly all the eggs in the body have a complete genome. Egg's cytoplasm has a remarkable ability to reprogram gene expression back to an embryonic state. As cells differentiate, their nuclei become increasingly resistant to reprogramming by eggs, he said.

Prof. K.S. Rangappa, Vice Chancellor of the University of Mysore, felicitated Prof. Gurdon. Renowned mathematician Prof. Manjul Bhargava, Local secretaries of 103rd Indian Science Congress, Prof N B Ramachandra and Prof D. D Somashekara were present.

Cloud Computing

Continued from p.1....

Cloud is a good option for connecting hundreds of Agricultural institutions across the country. Development of user friendly crop computational algorithms and tools is needed, Dr. Mishra suggested.

Cloud computing poses problems for developers and users of cloud software as it requires large data transfers over precious low-bandwidth. This also raises new privacy and security issues. However, it is an increasingly valuable tool for processing large datasets and it is already used by the US federal government, pharmaceutical companies, Internet companies, scientific labs and bioinformatics services, added Dr. Mishra.

Dr. Binay Panda who spoke on "Big Data and Personalized Medicine: Challenges and Opportunities for India", Dr. Dinesh Gupta on "Big Data Analysis in Biotechnology: Applications of Machine Learning and challenges towards clinical applications" and Dr. Michael Gromiha on "Algorithms and Applications of Bioinformatics in Big Data analysis". Prof. T Madhan Mohan chaired the programme.

Male Infertility

Continued from p.2....

While, dependency male reproductive tract on LH can be bypassed it cannot be done so in females. Reproductive competence evolved differently for males and females" he added. Prof Vassilios Papadopoulos, Prof Dianne M Creasy, and Martin Culty were present. Prof P P Mathur chaired the session.

Kanpur School Students Bag Infosys ISCA Award



Student from Seth Anandaram Jaipuriya School receiving the Infosys ISCA Travel Award from Prof K S Rangappa Vice Chancellor, University of Mysore

-Akshatha J

Mysuru: Students of Seth Anandram Jaipuriya School, Kanpur, UP, received the Infosys ISCA Travel Awards for the third consecutive time in essay writing completion at the Children's Science Congress as part of the 103rd Indian Science Congress organized by University of Mysore, Mysuru. Two students from the school, Divyansh Singh and Lavanya K Mehrotra bagged the award for writing essay on the topics, 'Genetically Reengineering of plants to be Draught Resistant' and 'Neural Lace'. While speaking to the ISC Newsletter, the students said that they were guided by teacher Anupma Srivastava and expressed their desire to excel in science.

Swacch Campus ...

-Shivendra G Urs

Mysuru: The volunteers from the National Service Scheme are doing a commendable job in keeping the premises neat and tidy helping in maintaining hygiene and cleanliness at the Mansagangotri campus during the 103rd Indian Science Congress. By going



Volunteers are cleaning the campus as part of 103rd Indian Science Congress

Photo-Shivendra G Urs

on cleanliness drives everyday with bags to pick up the plastic wastes thrown all over the campus by those attending the science congress the volunteer's are putting in efforts to maintain cleanliness. Guided by the NSS in-charge officers, the volunteer's move around the campus armed with plastic bags and gloves with the solo motto of go green to keep the campus clean. The efforts taken by the NSS volunteer's is commendable as they are also driving the message of "Swacch Bharat" home.

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