

# Exciting Science



## ESG REPORT

APRIL - AUGUST 2018

## ESG Report: April – August 2018

### Summary

#### About Exciting Science Group:

The Exciting Science Group comprises of scientists from two of Pune's best research institutions, NCL and IISER-Pune. This initiative is aimed at conveying the excitement of science and technology to school students. The motivation behind our programme is to attract the brightest talent from the next generation towards careers in science and technology, since it will be these students who will drive tomorrow's science and innovation based economy.

#### Popular Science Talks:

Held once a month (on the last Sunday) these talks give students a chance to meet scientists and understand the relevance of their work to society. Typically, these talks are filled with live demonstrations and experiments conducted by scientists – so as to kindle a sense of wonderment in the students. One talk was organized each from the month of April to August 2018. More than **1100 students** have participated in these talks.

#### Summer Workshops:

**2 Day Workshop on "Climate Change"** was organized in May 2018 for students currently enrolled in grade 9-11 to introduce participant students to the science of Climate Change. It focused on understanding what factors are responsible for Earth's climate. Additionally participants did simple exercises and projects. **31 students from 18 schools** participated in the workshops, including 4 students from 2 PMC schools.

**1 Mentoring Workshop** was organized in collaboration with IRIS in May 2018 to guide students currently enrolled between Class 8 to 12 to submit a research-based project in IRIS National Fair 2018. More than **140 students** participated in this preparatory workshop.

**5 Day Summer Camp** was organized in May 2018 at IISER-Pune for selected students currently enrolled in grade 8 from rural parts of Maharashtra. **12 students from 4 PMC schools** partnering with ESG participated in this residential camp. The camp included talks and interactions with scientists, hands-on lab sessions and visits to IISER Pune labs and other places of scientific interest.

#### Summer Internship Programme:

This is a programme of the Exciting Science Group, to get a few students from Pune Municipal Corporation schools to spend a summer in NCL/IISER labs. 2 PMC students were selected to intern at NCL lab this year. The internship provided an opportunity for these students to work with mentor scientists and PhD students and experience what it means to work in a research laboratory. The internship this year lasted over 2 months with the students spending the entire working week at the labs.

**Science Club Programme at IISER-Pune:**

Since 2011, ESG volunteers conducted weekly science club sessions for grade 8 students of PMC magnet schools at their premises. From 4 schools until last year, Exciting Science Group has expanded the science club programme to 8 schools this year catering to students from lower socio-economic background. This year ESG is running the science club sessions every weekend at the Science Activity Centre at IISER-Pune. 160 selected students currently enrolled in grade 9 at these schools are participating in the science club programme this year that will culminate in a Research Idea Competition in March 2019.

We would like to acknowledge the generous support for this activity from CSIR-NCL, IISER-Pune, the Venture Center, the Praj Foundation, the Persistent Foundation, the Nag Foundation and the Forbes Marshall Foundation.



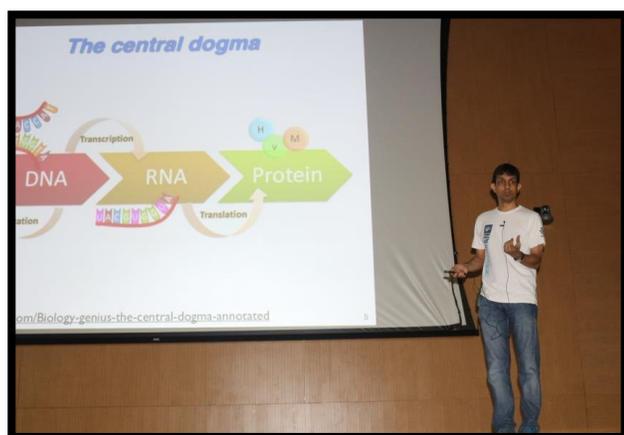
## Popular Talks

**What:** This series of once-a-month talks aims to connect school students to practicing scientists. Thus, school students get to hear a firsthand account of what it means to do research, and to get a feel for the thrill of discovery. The speakers do not attempt to teach science to the students – rather, the idea is to create a sense of “wow” and to kindle the students’ curiosity. The talks are not meant to be pedantic lectures, but combine live demonstrations, experiments and problem solving exercises to involve the students and engage their attention.

**When & Where:** The Popular Talks are held once a month at 10 am on Sunday mornings at IISER-Pune, Pashan. The talks are free and open to students and science teachers. Registration is on a first-come-first-served basis, and is done by sending email to [register@excitingscience.org](mailto:register@excitingscience.org) or through our web site: <http://www.excitingscience.org>. The attendance in these monthly outreach talks has more than doubled since last year.

Date	Speaker	What was the talk about?	No of participants
22 April 2018	Dr Madhusudan	“Computational Structural Biology”	152
27 May 2018	Dr Vineeta Bal	“Encounter with Microbes: How and when to counter?”	155
24 June 2018	Dr Yogesh Wadadekar	“The Multi-Color Universe”	355
29 July 2018	Dr Pooja Sancheti	“(Great) Women in Science”	165
12 Aug 2018	Dr Ramakrishna Bhat	“Lessons From Nature”	347
30 Sept 2018 (scheduled)	Dr Kundan Sengupta	“Where are my genes? A journey through the nucleus of a human cell”	-----

### Photographs from the talks:



**Talk on “Computational Structural Biology” by Dr Madhusudan, IISER Pune**



***Talk on “Encounter with Microbes” by Dr Vineeta Bal, IISER- Pune***



***Talk on “The Multi-Color Universe” by Dr Yogesh Wadadekar, NCRA, TIFR, Pune***



***Talk on “Lessons from Nature” by Dr R G Bhat, IISER-Pune***

**What did the students who attended these talks say?**

*"I like all topics covered. Fantastic explanation.  
Would love to attend all the talks."*

- Aaditya Patil, New English School

*"Very enlightening talk, delivered in simplistic and  
fun manner. Kudos to the team and Prof.Bhat.  
Looking forward to more such talks."*

- Advay Sangulkar, Abhinava English School

*"It was a good lecture which entertained us and was  
very informative. I wish to see more experiments  
next time."*

- Richa Shirole, Sri Sri Ravishankar Vidya Mandir

*"This was an amazing talk by Puja Sancheti. Thank  
you for sharing this kind of knowledge. I am sure that  
I will share this knowledge with my friends too."*

- Neerja Ananthu, Kendriya Vidyalaya

*"It was nice and knowledgeable for me. I had never  
ever heard this kind of lecture."*

- Hemant Kumar, Kendriya Vidyalaya

## Workshop: “Climate Change”

### **About the Workshop:**

The Exciting Science Group organized a 2-Day workshop on “Climate Change” on 15 & 16 May 2018 for students currently enrolled in class 9-11. 31 students from 18 schools participated in this workshop, including 4 students from 2 Pune Municipal Corporation Schools (2 from Dr Vasantdada Patil Vidyaniketan and 2 from Hutatma Balvir Vidyalaya). The objective of the workshop was to introduce students to the science of climate change.

### **Details:**

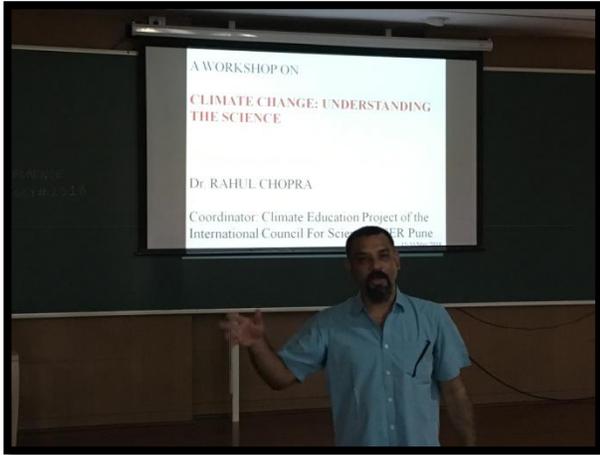
Date	Speaker	Title	Duration	No. of Participants	No. of Volunteers
Tue & Wed, 15 & 16 May 2018	Dr Rahul Chopra, IISER-Pune	Climate Change	3 hrs	31	2

Workshop sessions were conducted by Dr Rahul Chopra, the Coordinator of a Climate Education project of the International Council of Science based at the Indian Institute of Science Education and Research (IISER), Pune. He is the former Chair of the Centre for Earth and Environment at FLAME University, Pune. His research interests are multidisciplinary and include the use of satellite derived remotely sensed and in-situ data to evaluate our changing environment; field based geological and environmental studies, and the use of high resolution chemical analyses instruments and data to study various earth and environmental processes. Additionally, he is also interested in developing programs, curriculum, and teaching resources in Environmental Sciences and Studies. He received his Ph.D. from the University of Chicago, USA.

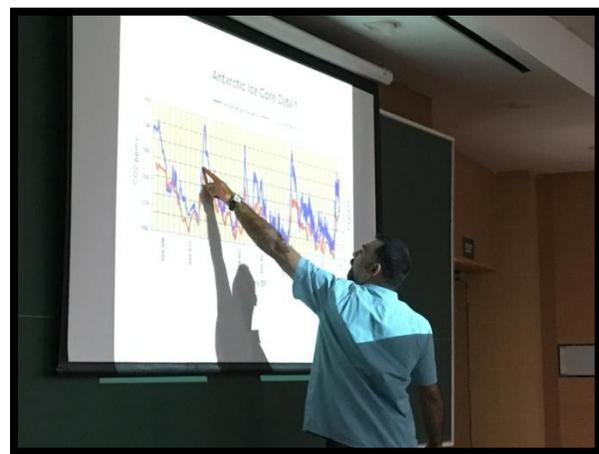
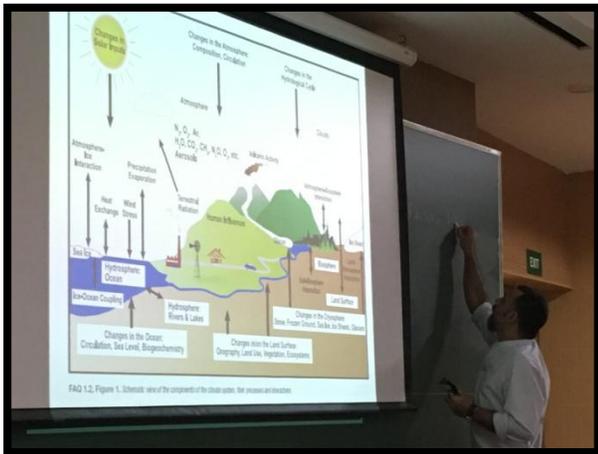
Through this workshop, Dr Chopra introduced participants to the science of Climate Change. It focused on understanding what factors are responsible for Earth’s climate. These include the roles of Earth’s orbital parameters around the Sun, the atmosphere and the greenhouse effect, the biosphere, the oceans, the lithosphere, the cryosphere, the anthroposphere, and their interactions in determining the climate of the Earth. The workshop also focused on understanding natural variability in Earth’s climate and climate change caused due to human activities. Several hands-on exercises, computer simulations and models, and interactive games were used to understand the material. The workshop included a short lecture session where participants were introduced to the topic. Additionally participants did simple exercises and projects.

Participants from PMC schools were provided laptops by ESG during the workshop. All participants received a certificate of participation. The Speaker was felicitated with a gift and ESG mug. The registration of participants and volunteering during the workshop was done by both Shraddha Gargatti and Gayatri Kshirsagar. The overall coordination of the workshop was done by Shraddha Gargatti.

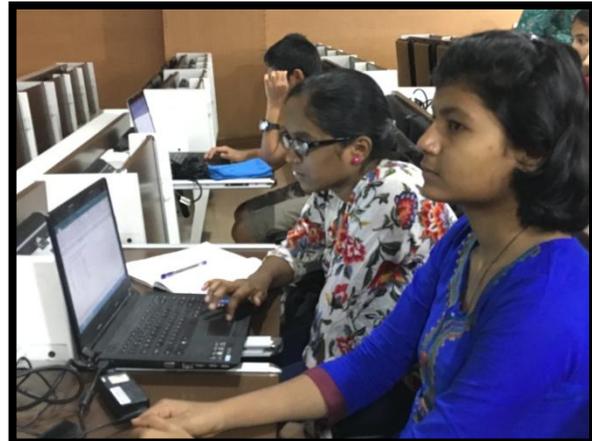
***Photographs from the Workshop:***



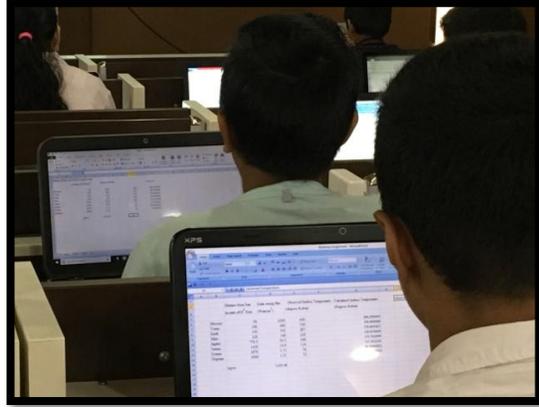
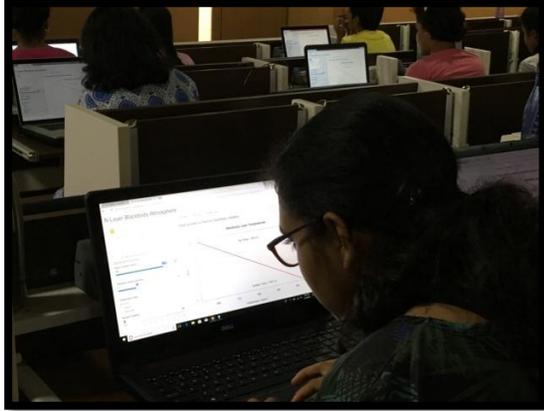
***Dr Chopra explaining the concept of climate change to the workshop participants***



***Workshop Participants from PMC Schools***



***Participants working on exercises and projects during the workshop***



***Workshop Participants***

***What did the participants who attended these talks say?***

After the workshop, kids were asked to fill up an evaluation form in which we had asked the kids to rate us between 1 and 5 (1-Poor; 2-Okay; 3-Good; 4-Very Good; 5-Excellent) on each of the activity (content, explanation by faculty, overall rating, etc). Overall, the workshop got a rating of either 4 or 5. We also took a feedback on the part of the workshop they enjoyed the most. More than 55% of the participants equally enjoyed the explanation, presentation, and doing the project.

Also, the students were asked for their feedback and suggestions, the following are what they had to say:

*"The workshop was very good. Rahul Sir explained everything very well. The presentation and exercises were very good."*

- Chninmay Argade, Abhinava School

*"It was amazing and I enjoyed it a lot."*

- Aaditya Pawar, Loyola High School

*"It was very good but the maths part was a little complicated and I couldn't understand it. Overall good but should have included more experimental work. Overall beautiful !!"*

- Vikram Jirgale, Jnana Prabhodini Prashala

*"The workshop was very good. The topic was excellent though. Request you to keep taking excellent informative topics as such for all workshops."*

- Anurag Talele, Loyola High School

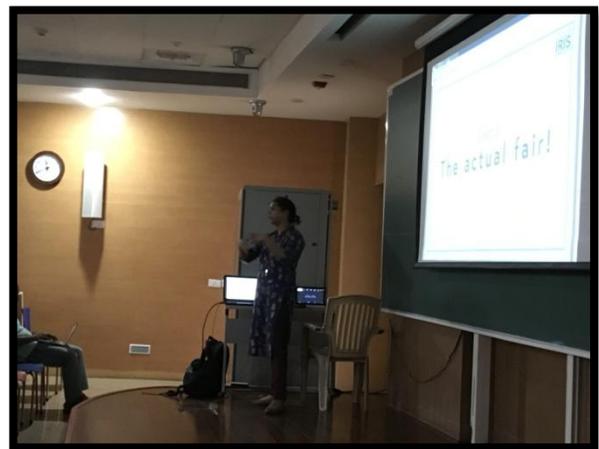
## Mentoring Workshop for Research Projects

Exciting Science Group in association with IRIS organized a mentoring workshop for working on research projects on 5 May 2018 (Saturday) at IISER-Pune for students currently enrolled between Class 8 to Class 12. More than 140 students participated in the workshop.

This workshop was organized in order to guide students to submit a research-based project in IRIS National Fair 2018. The workshop involved a presentation on developing a research project by Dr Guruswamy followed by another presentation with videos that gave a glimpse of the IRIS experience to excite the students. The mentors also answered any specific queries related to research guidelines, the project categories, the application process and any other specific details about IRIS National Fair.



*Dr.Guruswamy guiding the participants about research-based projects*



*IRIS Guidelines and Glimpses of the National Fair being shared by Shweta from the IRIS Team*

## 5-Day Summer Camp at IISER-Pune

A 5-Day Summer Camp was organised by IISER-Pune for selected class VIII students from rural parts of Maharashtra from May 21-25, 2018. 12 students from 4 PMC schools partnering with ESG participated in this residential camp at IISER-P. A teacher from 1 PMC School accompanied these students during the entire camp. The camp included talks and interactions with scientists, hands-on lab sessions and visits to IISER Pune labs and other places of scientific interest. The objective of the camp was to provide exposure to school students from lower socio-economic background about science and technology, and the various possibilities and career options therein.

The students were provided with participation certificates from ESG. Both Shraddha Gargatti and Gayatri Kshirsagar volunteered for the sessions during the camp. The overall coordination with the PMC school principals and their teachers towards the summer camp was done by Shraddha Gargatti.

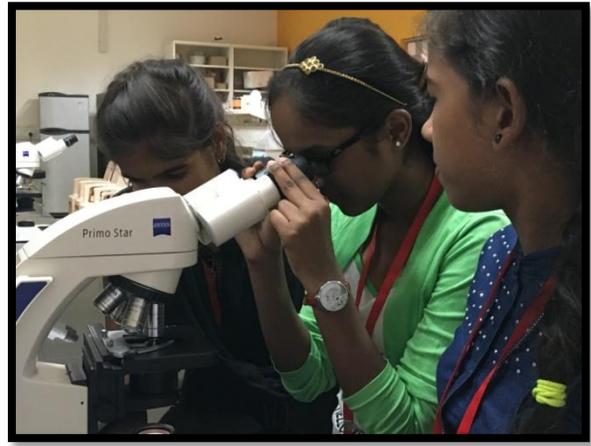
### Photographs of the Summer Camp



***Introduction & Orientation about the Summer Camp***



***Lectures on Scientific Topics by IISER-P Faculty***



*PMC Students participating in Laboratory Sessions during the camp*



*Participant PMC Students of Summer Camp from the 4 PMC Schools*

**Feedback:**

After the summer camp, the PMC students were asked for their feedback and suggestions, the following are what they had to say:

*“IISER Summer Camp helped me learn many new things. I learnt how to handle instrument that were in Chemistry lab. In the last 5 days I learnt more about colors, polymers/plastic. I also learnt how to manage time.”*

- Priya Mishra, Ahilyadevi I-Teach School

*“IISER Summer Camp has helped me explore many new things through fun activities. My overall experience was very overwhelming. I made many new friends. The best session was about plastic. I loved it very much. I got to know that plastic don't just have disadvantages but also advantages. Also the session we had in the biology lab, I got to know my own blood group and also saw many micro-organisms under microscope”*

- Fatima Shaikh, K C Thackeray Vidyaniketan

*“IISER Camp mule amhala parivarla sodun rahyanchi savay zhali ani anolkhi mitrasobat rahaychi savay zhali. Amhala IISER madhe vividh lab madhe zau shaklo ani experiments karnyachi sandhi bhetli. Amhala CME Trip khup avadla kaaran amhala purviche sainyachi museum dakhavala. Amhala IITM chi trip pan khup avadla. Tyat amhala vatavarnat honara badal janun ghetlo. Tithle upakaran pahilo.”*

- Umesh Dontal, Hutatma Balvir Shirishkumar Vidyalaya

*“ IISER madhil camp madhe alyavar Chemistry, Biology, Physics he Vishay khup changla prakare shikavale. Ithe rahayla soy khup chaan hoti. Lecture Hall madhe basnyasathi khup chan hoti. IISER madhe lab baghayla and prayog karayla milale. Science vishaya baddal bhiti naahiye. Ganita vishayi aavad hotich ti ajun adhik vaadli aahe. ”*

- Ankita Kakade, Dr Vasantdada Patil Vidyaniketan

## Summer Internship Programme at NCL

Exciting Science Group has been organizing Summer Internship Programme for PMC students between April to June since the year 2015. The objective of the Summer Internship programme is to provide an opportunity for PMC students to work with mentor scientists and PhD students at NCL and experience what it means to work in a research laboratory.

This year, we selected two students from PMC Vidya Niketan School, Hutatma Balveer Shirishkumar who joined Summer Internship from 25 April 2018 to 14 June 2018 in research laboratory at CSIR-National Chemical Laboratory, Pune.

Name of the student	Name of the school	Name of the Scientist
Muskan Singh	Hutatma Balveer Shirishkumar Vidyalaya	Dr. Chetan Gadgil
Suraj Thorat	Hutatma Balveer Shirishkumar Vidyalaya	

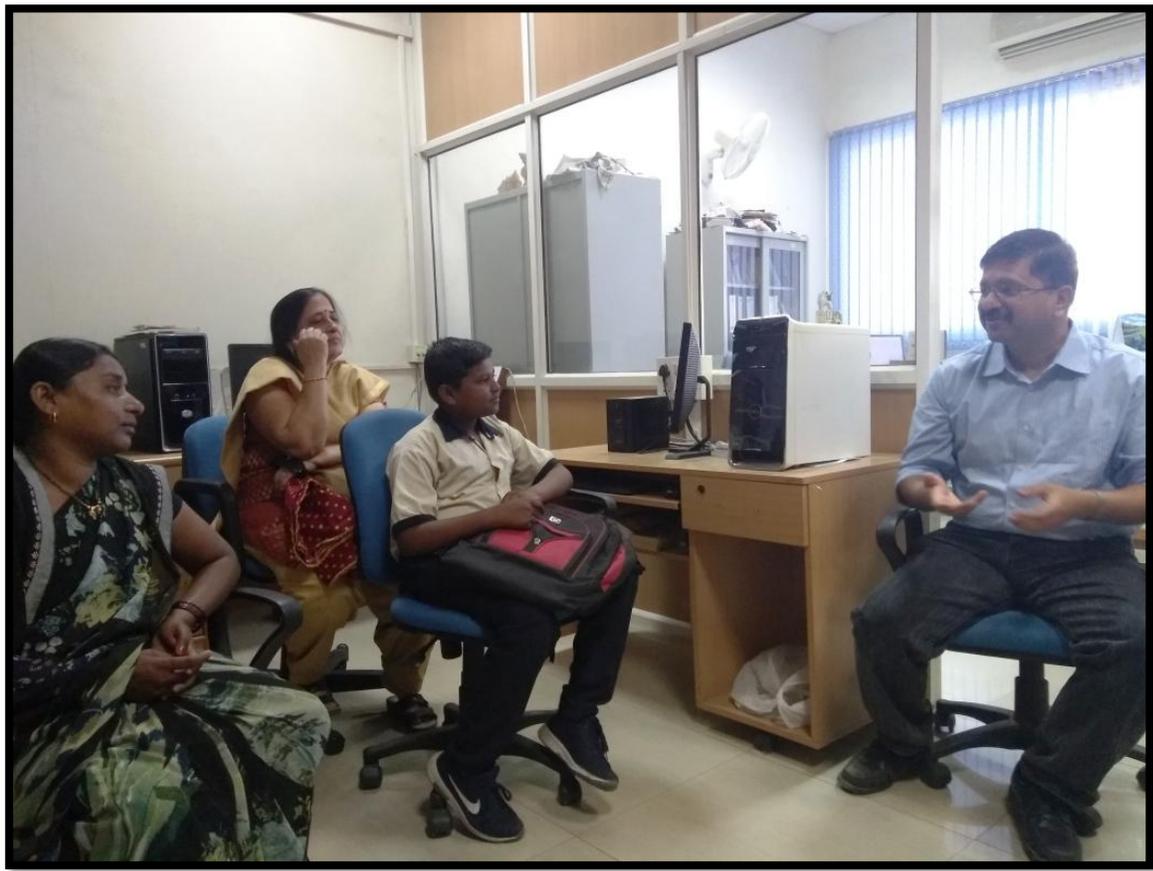
Dr. Chetan Gadgil, scientist at CSIR-NCL mentored PMC students, Suraj and Muskan in data visualization and analysis. The aim of their project is to plot histograms of river length distribution and mountain height distribution across continents to see if it is the same or differs. The students extracted and compared the data from various resources and they learnt to plot graphs and analyze the results.

Exciting Science Group organized orientation session on Wednesday, 25 April 2018, to introduce the interns to their mentor and PhD students. On the first day, the students were also briefed about safety precautions; need to be followed in research laboratories.

The students maintained a weekly report of the work done by them in the laboratory. These activities helped them to record and interpret observations. They also learnt to present the data of their laboratory work. The overall coordination of Summer Internship Programme was done by Gayatri Kshirsagar.

A felicitation event was organized on Thursday, 14 June 2018 to meet these students and their mentors at the end of this programme. The students gave a brief presentation of their work and also shared their learning experience during the event. At the end of this event, the students were felicitated by their mentor Scientist with certificate of participation.

**Photographs from the Summer Internship Programme 2018**



***Orientation session was organized for PMC students, their parents and a teacher on 25 April 2018 at CSIR-NCL***

**Felicitation event was organized at CSIR-NCL (14 June 2018)**



***Dr Guru and Dr Chetan briefed the audience about Summer Internship Programme 2018***



***Mrs Gulawani (Hutatma School) , Dr Sucheta (CSIR-NCL) and Mrs Bageshree Adkar (Praj Foundation) expressed their feelings about ESG Summer Internship programme***

***Students explain their research work at the Felicitation event (14 June 2018)***



***Muskan Singh***



***Suraj Thorat***



*The students were felicitated by the mentor Scientists at CSIR-NCL*



*The proud parents of interns at felicitation event at CSIR-NCL*

**Feedback:**

After the internship programme, the PMC students were asked for their feedback and suggestions, the following are what they had to say:

**Feedback : Muskan Singh (Hutatma Balveer Shirishkumar Vidyalaya)**

मी मुस्कान पिंठ, प्रिंग हुतात्मा बालवीर शिरीषकुमार विद्यालयामध्ये शिकत आहे. मी २५ एप्रिल ते २५ जून या कालावधीत मी NCL येथे Summer Internship साठी गेली होते. या इंटर्नशिपमध्ये मला ग्रुप गोष्टी शिकायला मिळाले, जसे की computer चे uses काय काय असतात, इंटरनेट कसे वापरायचे? कोणत्या website वरून सर्वात उत्तम माहिती आपल्याला मिळू शकते हे सर्व गोष्टी आम्ही computer च्या मदतीने शोधली.

आम्हाला NCL येथे काम करण्याची संधी मिळाली, त्यासाठी आम्ही स्वतःचा भाग्यवान असतो. तसेच चेतन गाळविले सर हे NCL मध्ये कामध्यासोवत होते, त्यांनी आम्हाला ग्रुप चांगल्याप्रकारे मांडादर्शन केले. मला NCL मध्ये जाऊन ग्रुप गोष्टी शिकायला तर मिळालेच, व तसेच ग्रुप आनंद देखिल आले.

**Feedback : Suraj Thorat ( Hutatma Balveer Shirishkumar Vidyalaya)**

मी सुरज भास्कर थोरत. मी हुतात्मा बालवीर शिरीषकुमार विद्यालयात शिकत आहे. मी २५ एप्रिल ते २५ जून या कालावधीत मी Summer Internship साठी गेलो होतो. मला ही Summer Internship ग्रुप आवडली. त्या Summer Internship मध्ये मला ग्रुप काही शिकायला मिळाले. मला हा computer चा व्यवस्थाचा पटिलाच अनुभव होता आणि मला हा ग्रुप आवडला मला तेथील ताईव तेथील सर्वच ग्रुप मदत करायचे.

या Summer Internship मध्ये मला ग्रुप काही शिकायला मिळाले. Computer विषयी पण शिकायला मिळाले. हे सर्व मला N.C.L मुळे शिकायला मिळाले. मी N.C.L ला मनापासून Thank You म्हणून. आणि सर्वात जास्त Thanks हे चेतन सरांना म्हणून कारण त्यांनी आम्हाला मांडादर्शन केले आणि ही संधी दिली.

Thank You Chetan sir and Thank You  
N. C. L

## Science Club Programme at IISER-P

Since 2011, ESG volunteers conducted weekly science club sessions for grade 8 students of PMC magnet schools at their premises. From 4 schools until last year, Exciting Science Group has expanded the science club programme to 8 schools this year catering to students from lower socio-economic background. This year ESG is running the science club sessions every weekend at the Science Activity Centre at IISER-Pune. This centre houses a dedicated science laboratory facility for hands-on activities along with a lecture hall with a 250-seating capacity. 20 students/school viz. 160 selected students currently enrolled in grade 9 at these schools are participating in the science club programme this year that will culminate in a Research Idea Competition in March 2019.

The students are mentored by research students from IISER-P and NCL during the weekly sessions. It gives a plenty of opportunity for the participant students to do hands-on science and enhance the science they learn in their classes. A science club session typically lasts for 2 hours. In this time, the participant students are either engaged in hands-on science activities, or they plan/discuss/work on a science project or have a special scientific visitor. These science clubs are structured to take the student participants through a journey that starts with discovering the excitement of science; then transitions to learning the scientific method of making observations, framing hypotheses and arriving at conclusions; and winds up learning how to ask and frame research questions and develop an approach to answering this question.

It has been an inspiring experience for the students to come to the IISER campus. With high-quality resources and infrastructure at the Science Activity Centre, it gives us a scope to qualitatively engage these students in inquiry-based sessions to enhance their approach to scientific methodology.

### **Schools covered:**

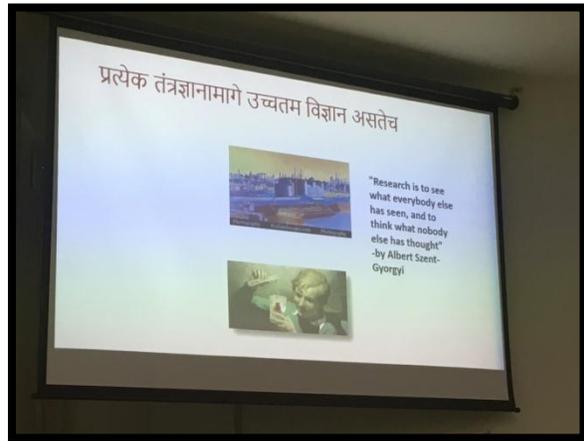
- Hutatma Balvir Vidyalaya, Opp Police lines, Shivaji Nagar
- Dr Vasantdada Patil Vidyaniketan, Shaniwar Peth
- Ahilyadevi Holkar I-Teach School, Aundh-Baner
- Savitiribai Phule English School, Bhavani Peth
- SNTD Kanyashala, Narayan Peth
- Nutan Marathi Boys' School, Budhwar Peth
- Nutan Marathi Girls' School, Tilak Road
- New English School, Ramanbaug

The first session was organized on Saturday, 14 July 2018 at the IISER Science Activity Centre for all the participant students and teachers from these schools. The session began with an introduction to ESG Science Club Programme by Dr.Guruswamy, Scientist, NCL Pune and Mrs.Neeta Gulawani, Science Teacher from Hutatma Balvir School (this school is associated with ESG since 2010). It was then followed by an interactive Marathi talk on "निसर्गाने आम्हाला काय दिले?" by a senior IISER Faculty Dr Arvind Natu. Post lunch, an introduction to Exciting Science Group was given by Gayatri Kshirsagar in Marathi, followed by a Mathematics refresher course by Mrs. Gulawani. The overall coordination with the school principals and teachers, speakers, booking transport for participants towards the session was done by Shraddha Gargatti.

**Glimpses of the first science club session at the IISER Science Activity Centre:**



***Introduction to the Science Club Programme by Dr Guruswamy, NCL Pune and Mrs. Neeta Gulawani, Science Teacher, Hutatma Balvir School***



***Interactive Marathi Talk on “निसर्गाने आम्हाला काय दिले?” by Dr Arvind Natu, IISER-Pune***



***Maths refresher course by Mrs. Gulawani***

***Felicitation of the speaker Dr. Natu***

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The hands-on science club sessions for these students began in August 2018. Students from every school are accompanied by a coordinating teacher for every session. ESG has provided notebooks to all the participants for the year-long science club programme. ESG books the transport, provides the students with required stationery, consumables and other material for the weekly science club sessions. The weekly sessions are coordinated by both Shraddha Gargatti and Gayatri Kshirsagar.

**Glimpses of Science Club Sessions on Microscopy and Fun with Slime in August 2018**



**What the participant teachers had to say?**

*"We all found IISER very interesting. Dr Natu Sir's lecture gave us a different attitude and we teachers learnt how to win students' hearts. You all treated us very kindly. Very memorable event"*

– Mrs. Madhuri Kolhatkar, SNTD Kanyashala

*"I think the speaker seemed super invested and the relation that science is inspired by nature helped students make a strong connection. It also provided a positive vibe that science is to protect and preserve. Students were engaged and curious which is our basic aim. I would say he gave students a bright spot. The inspiration of the bullet train coming from nature was a bulb moment for me. He redefined the term "observation" for me."*

- Ankit Chawla, Ahilyadevi I-Teach School

*"Dr.Natu sir यांचे पर्यावरणा च्या निरिक्षणातून ,निसर्गाकडून विज्ञानाचे नियम कसे शिकता येतात हे व्याख्यान ऐकून मुले खूप आश्चर्य चकित झाली आहेत .खूप खूप प्रश्न विचारत आहेत. त्यांना असं आणखी खूप ऐकायचं आहे. असं सारखं म्हणतायत. मुलांनी खूप प्रश्न स्वताः काढून ठेवले आहेत. 11तारखेची वाट पहात आहेत. माझी ही 9वीची सर्व नवी मुलं आयसर चा परिसर ,लॅब व नातूसरांच्या व्याख्यानाने भारावून गेली आहेत. येण्यास खूप खूप उत्सुक झाली आहेत. Thank you Shraddha and all IISER staff."*

- Mrs. Neeta Gulawani, Hutatma Balvir Vidyalaya

*"It is our privilege to perform the activities at this renowned institution and attend the lectures given by experts. Thank you ESG."*

- Mrs.Aarti Toke, NMV Girls' High School

**The Science Club Fellows conducting the Science Club sessions:**

01. Hitesh Wankhede – 3rd year BS-MS, IISER-P
02. Swastik Mishra - 4th year BS-MS, IISER-P
03. Zakhiya P C - 4th year BS-MS, IISER-P
04. Sankalp Chaudhari - 3rd year BS-MS, IISER-P
05. Dnyanesh Dubal – PhD Student, IISER-P
06. Bhavin Uttekar – PhD Student, IISER-P
07. Danish Kaur - 5th year BS-MS, IISER-P
08. Anup Singh – PhD Student, NCL
09. Utkarsh Khandelwal - 3rd year BS-MS, IISER-P
10. Aasim Saifee - 3rd year BS-MS, IISER-P
11. Mohammed Irfan – 2<sup>nd</sup> year BS-MS, IISER-P

## PRESS

### THE INDIAN EXPRESS – 16 JUNE 2018

## For two PMC school students, a chance to work with scientists, chase their dreams

This is the fourth year the team has been offering summer internships to students studying at corporation schools, but they have been actively organising science talks and competitions for over a decade.

Written by ANJALI MARAR | Pune | Published: June 16, 2018 8:00:21 am



Suraj and Muskan.

Suraj Thorat was ecstatic when he got the opportunity to use a computer for the first time in his life, while he was pursuing a summer internship under a team of scientists at the CSIR-National Chemical Laboratory (NCL).

Suraj, who has just started Class IX, hails from a small village called Tondpur in Hingoli district. He has been studying at a Pune Municipal Corporation (PMC) school, Vidya Niketan: Hutatma Balveer Shirishkumar, for about a year. But his dreams are about a galaxy, or galaxies, far,

"I want to study galaxies and now I know how to use computers," said Suraj, who, along with Muskan Singh, another student of the same school, has completed a two-month-long internship under the mentorship of scientist Chetan Gadgil. The internship was organised by the Exciting Science group, operating under the aegis of CSIR-NCL and the Indian Institute of Science, Education and Research (IISER), Pune.

This is the fourth year the team has been offering summer internships to students studying at corporation schools, but they have been actively organising science talks and competitions for over a decade. "I was assigned to collect data on the length of rivers, and trace the paths of all rivers across continents like Asia, North America and Africa, using histograms plotted by computers. I have learned so much about the thousands of rivers in these continents," said Suraj. He added, "I was so excited to get a chance to work on a computer... in my school, students are introduced to computers only in class IX.... I am lucky that I know the various parts, their uses and how to operate one before my classmates". For him, learning how to use computers was the highlight of the internship. "He is so happy... Suraj doesn't want to return to our village," said Suraj's father, Bhaskar Thorat.

Muskan, a Class X student who was also part of the internship, was assigned the task of studying mountains in various continents. "Though I had worked on computers and was comfortable with Windows 7, the systems at the labs were far advanced. The atmosphere was friendly and our guides addressed even the smallest of our queries," she said.

Muskan said she considers herself lucky to get such a hands-on opportunity to learn science. "Since Class VI, my summer vacations have been spent in some science-related activity or the other..." she said, adding that she also loves Maths.

**LOKMAT – 16 JUNE 2018**

## लोकमत

शालेय विद्यार्थ्यांसाठी 'एक्सायटिंग सायन्स ग्रुप': येत्या २४ जून रोजी कार्यशाळा

# वैज्ञानिक संशोधन जाणून घेण्याची संधी

लोकमत न्यूज नेटवर्क

पुणे : शालेय विद्यार्थ्यांना संशोधन म्हणजे नेमके काय, प्रयोगशाळा म्हणजे काय, त्यामध्ये संशोधक कसे काम करतात, पीएच.डी. कशा प्रकारे केली जाते, या सर्वांबद्दल जवळून ओळख व्हावी, तसेच त्यांच्यातील विज्ञानाबद्दल गोडी निर्माण व्हावी आणि त्यांची उत्सुकता कायम राहावी या उद्देशाने एक्सायटिंग सायन्स ग्रुपतर्फे दरवर्षी समर इंटरनॅशनल प्रोग्राम घेण्यात येतो. त्यामध्ये विद्यार्थ्यांना विज्ञानविषयक माहिती जाणून घेता येते.

सीएसआयआर आणि आयसर, पुणे येथे कार्यरत असणारे शास्त्रज्ञ स्वयंघरे णेने गेली १० वर्षे 'एक्सायटिंग सायन्स ग्रुप' चालवत आहेत. या संस्थेद्वारे मुलांना विज्ञानविषयी आवड निर्माण व्हावी, या उद्देशाने विविध कार्यक्रमांचे



विद्यार्थ्यांसह आयसरमधील संशोधक.

आयोजन केले जाते. महिन्यातून एकदा मोफत असे विज्ञानविषयक व्याख्यान आयसर पुणे येथे आयोजित केले जाते.

यापुढील विज्ञान व्याख्यान हे २४ जून रोजी सकाळी १० ते ११.३० या वेळेत या 'द मिलिटिकलर युनिव्हर्स' या विषयावर न्यू लेक्चर हॉल, इंद्राणी बालन सायन्स ॲक्टिव्हिटी सेंटर, आयसर, पुणे येथे होणार आहे. या ग्रुपला फोर्ब्स मार्शल फाउंडेशन, प्राज

एक्सायटिंग सायन्स ग्रुपसाठी नोंदणी

एक्सायटिंग सायन्स ग्रुपच्या असोसिएट गायत्री क्षीरसागर या उपक्रमाविषयी माहिती देताना म्हणाल्या, ग्रुपच्या कार्यक्रमासाठी मोफत नाव नोंदणी करण्यासाठी [www.excitingscience.org](http://www.excitingscience.org) या वेबसाईटला भेट द्या. एक्सायटिंग सायन्स ग्रुपद्वारे पुणे महापालिकेच्या काही शाळांमध्ये सायन्स क्लब घेतले जातात. उन्हाळ्यामध्ये विविध वर्कशॉप्सचे सुद्धा आयोजन केले जाते.

फाउंडेशन, नाग फाउंडेशन आणि पर्सिस्टंट फाउंडेशन यांनी सहकार्य केले आहे. मागील वर्षीप्रमाणे या वर्षीदेखील त्यांनी समर इंटरनॅशनल प्रोग्राम हा उपक्रम राबविला, यात पुण्यातील महापालिकेच्या, हुतात्मा बालवीर शिरीषकुमार विद्यालयामधील दोन विद्यार्थ्यांचा समावेश होता. त्यांना आयसरच्या प्रयोगशाळेत काम करण्याची संधी मिळाली.

या मुलांनी यावर्षी त्यांच्या प्रकल्पाचा भाग म्हणून विविध खंडांमधील वेगवेगळ्या पर्वत रांगा आणि नद्या यांचा अभ्यास केला. डॉ. चेतन गाडगीळ (संशोधक-सीएसआयआर - एनसी एल ) यांनी मुलांना या काळात मार्गदर्शन केले. मुस्कान सिंग आणि सूरज थोरात (हुतात्मा बालवीर शिरीषकुमार विद्यालय) असे त्या विद्यार्थ्यांची नावे आहेत.

Hello Pune  
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## PUNE MIRROR – 24 JUNE 2018

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**PuneMirror**

### Across the universe

By Ashwin Khan, Pune Mirror | Jun 24, 2018, 10:22 AM IST



*Learn all about stars, planets and giant black holes at a talk today by a well-known city-based scientist.*

Space science fascinates Yogesh Wadadekar, who specialises in identifying and understanding the physical properties of distant hidden galaxies. Wadadekar, a professor at the National Centre for Radio Astrophysics (NCRA), hopes to engage an audience of science enthusiasts and share his passion for the subject of space exploration.

Wadadekar's talk titled 'The Multicolour Universe' deals with how astronomers can use telescopes in space and on the ground to discover galaxies, study colossal black holes, and distinguish the

properties of stars and planets. The talk will further clarify how heavenly bodies can now be observed by astronomers in different wavelength bands.

The talk, says Wadadekar, is designed for seventh to tenth standard students. However, it is open to anybody interested in science. "I am obviously not going to delve too deep into the subject. That would require an advanced understanding of physics and mathematics," says Wadadekar. What he hopes to achieve is simplify scientific knowledge to make it accessible. The trick is to connect scientific knowledge with something that people can relate to," he says. For example, it would be possible to track Elon Musk's Tesla Roadster thousands of years from now, says Wadadekar.

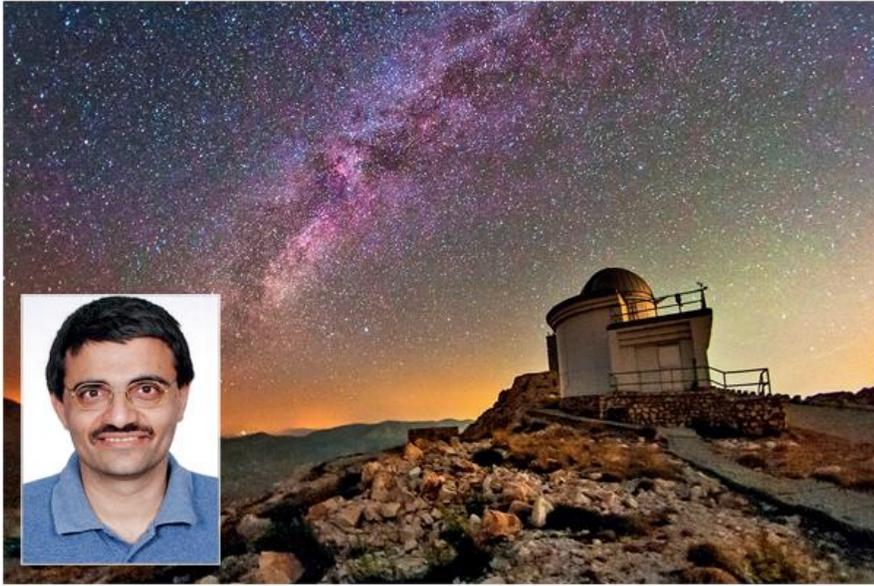
It was reported that the Roadster is headed towards the asteroid belt, which is positioned between the orbits of Mars and Jupiter. "You can take a picture of the asteroid belt and distinguish Elon's car from the asteroids through its colour," he explains. Given that there are 100 billion galaxies out there, Wadadekar is deeply invested in exploring them. He has carried out extensive research on galaxy formation and evolution.

Three years ago, he led a project to discover a giant radio galaxy (a galaxy that emits radiation in the radio-frequency range of the electromagnetic spectrum). The scientist, who was a postdoctoral fellow at the Institut d'Astrophysique de Paris between 2001 to 2002, also has a postdoctoral degree from the Space Telescope Science Institute in Baltimore.

Wadadekar's enthusiasm for space exploration is infectious. "Exploring the unknown in space is akin to how explorers went about discovering new lands," says Wadadekar, who has worked as an astronomical software scientist for the Sloan Digital Sky Survey at Princeton University in the US.

Those who wish to attend the talk must register at [www.excitingscience.org](http://www.excitingscience.org). Seats are available on first-come-first-serve basis.

**WHERE:** New Lecture Hall, Smt Indrani Balan Science Activity Centre, IISER, Pashan **WHEN:** June 24, 10 am to 11.15 am  
**ENTRY:** Free



**PUNE MIRROR – 27 JULY 2018**

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**PuneMirror**

**Hidden figures**

Pune Mirror | Jul 27, 2018, 02:30 AM IST



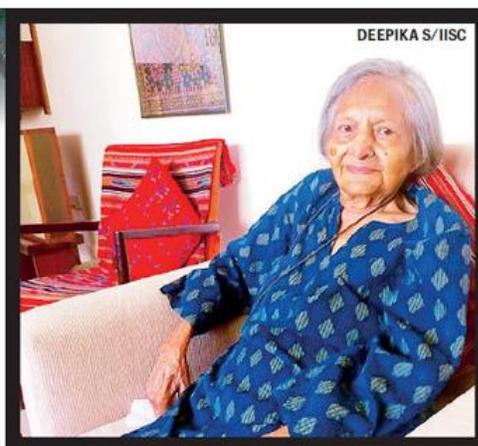
**By Navjyoti Dalal**

**Attend a talk to learn the extraordinary stories of women in science**

Although many women have been pioneers in the field of science, in society’s collective consciousness science is rarely considered to be a woman’s domain. How do we view women in science? Who are they? What are their stories and why are they important? Did they struggle to get their genius validated by society? Why must we remember them? To find answers to these questions and to throw a spotlight on women in science, the Exciting Science Group (ESG) with the Indian Institute of Science

Education and Research, Pune (IISER) has organised a talk titled ‘(Great) Women in Science’, which is primarily aimed at school children but is open to all. The talk is a part of the ESG’s ongoing Popular Talk series for making science interesting and relatable to all.

The extraordinary journeys of women in the field will be presented by Dr Pooja Sancheti, a visiting faculty of the humanities and social sciences programme at IISER. While most talks in the ESG series are related to core science, Dr Sancheti’s lecture “is an anomaly”, she says, “because I will not be talking about science or demonstrating science experiments, but instead speak on the life of women in science,” says Dr Sancheti. A teacher of literature and language, she is not a scientist, points out the academician. “My talk is not from an insider’s perspective but an outsider’s.”



*The scientists of ISRO’s Mangalyaan mission (above) who caught the world’s attention in 2014; the pioneers Ada Lovelace and 101-year-old Violet Bajaj (L–R)*

Dr Sancheti has curated a list of phenomenal women from the sciences like Ada Lovelace, Marie Curie and some Indian scientists like Violet Bajaj and Anna Mani as well. “The talk will share the stories of several women scientists who should be better known, who have made contributions to science throughout history but either received recognition several decades or centuries after their deaths, and those that broke new ground through their work,” says Dr Sancheti, who will also briefly touch upon gender bias in the field. “My desire is to use their stories so that parents and teachers are encouraged to become more aware of prevalent gender biases, and for students to be inspired. That, in spite of institutional difficulties, they can rise to greatness,” she adds.

Along with Dr Sancheti’s background in literature, her observer view has helped put together a wellrounded list which features writers of science as well. “Mary Shelley, who wrote Frankenstein, was not a scientist. But her contribution is tremendous for she pioneered the genre of science fiction, which is largely associated with men,” explains Dr Sancheti. While she believes gender prejudice is prevalent in every field including science, she won’t dwell on it during the talk. “These stories, which pan from the 17th century times to the present, are a comment on how far we have come. Women of all times had to fight institutional prejudice to rise, to be granted agency and air their views,” says Dr Sancheti, who feels that women’s representation is less visible because their contributions are often not counted. Gender conflict, says Dr Sancheti, arises in professions that were thought to be male bastions, like soldiers, engineers, scientists, and even painters (in the Renaissance) and, for some time, even writers.

To attend the talk, register online at [excitingscience.org](http://excitingscience.org) or write to [register@excitingscience.org](mailto:register@excitingscience.org).

**WHERE:** New Lecture Hall, Indrani Balan Science Activity Centre, IISER, Pashan

**WHEN:** July 29, 10 am to 11.30am