



**THE INSTITUTE OF MATHEMATICAL SCIENCES
TARAMANI, CHENNAI 600 113.**

**Quarterly Report
January 2019 - March 2019**

IMSc bags two SPARC grants for international collaboration

Prof. Sanoli Gun and Prof. Amritanshu Prasad received two separate grants under the *Scheme for Promotion of Academic Research Collaboration* (SPARC) of the Ministry of Human Resource Development. Prof. Gun's proposal on Arithmetical aspects of the Fourier coefficients of modular forms is for collaboration with Prof. Yuri Bilu of the University of Bordeaux, France. Prof. Prasad's proposal in Representation zeta functions is for collaboration with Prof. Uri Onn of the Australian National University.

Symposium on Regulatory Epigenomics: 10th-13th March 2019

Rahul Siddharthan was one of four organizers and the local organizer of the India—EMBO Symposium on *Regulatory Epigenomics: From Large Data to Useful Models*, held in Muttukadu near Chennai from March 10-13, 2019. The event was primarily funded by *European Molecular Biology Organization* (EMBO) and *DBT-Wellcome India Alliance* (IA), with local support and some funding from IMSc. It featured 19 speakers including 11 international speakers, and about 70 participants, mostly from India. It is one of three symposia funded by EMBO and IA annually in India. The event was praised by speakers and participants as of very high quality and a rare opportunity for Indian students to hear about cutting-edge work in this field as well as to interact with speakers over coffee and meals.

Website: <http://meetings.embo.org/event/19-regulatory-epigenomics>.

Size matters

Rahul Siddharthan and Gautam Menon are investigators, with Leelavati Narlikar (NCL Pune; principal investigator), Uma Ram (obstetrician and gynaecologist at Seethapathy Clinic, Chennai) and Ponnusamy Saravanan (endocrinologist and professor at Warwick, UK) of a project "Size Matters" on predicting risk for pregnant women of delivering babies that are "small for gestational age". This project is funded by BIRAC, DBT and the Bill and Melinda Gates Foundation, and will use data from the Gates Foundation's "knowledge integration" initiative as well as in-house data from our clinical collaborators, and will run for 18 months from start of funding. Leelavati Narlikar and Rahul Siddharthan also attended a "Gates Grand Challenges Partners Meeting" in New Delhi, from March 14-16, 2019, and presented this proposal. The meeting was attended by awardees, officials from India, Brazil and Africa, as well as organizers and platform experts from those countries and the USA.

The Stellar Legacy of Prof. Meghnad Saha: 3rd - 4th Jan 2019

The Stellar Legacy of Prof. Meghnad Saha: from Society to the Cosmos – This two-day event at IMSc was organized by Manjari Bagchi and Varuni P. to celebrate the 125th birth anniversary of Meghnad Saha. It consisted of a conference and a day of lectures aimed at school students. It was partially funded by NASI (Chennai local chapter). Eminent speakers from various institutes (IIA, TIFR, IUCAA, UC-Berkeley, and KIPAC-Stanford) presented their research work. Around 100 school children participated. Website: <https://www.imsc.res.in/outreach/MSaha2019/>



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Mechanics of Complex Matter: 4th to 7th March 2019

A workshop on "Mechanics of Complex Matter: Criticality, intermittency and collective behaviour" was organized by Pinaki Chaudhiru and Purusattam Ray at IMSc during March 04-07, 2019. It is the seventh such workshop in the *Fracmeet* series of meetings that has been held at IMSc since 2012. The objective of the workshop was to provide graduate students and researchers with an exposure to the current developments in understanding how various materials, both soft and hard, in crystalline and amorphous forms, respond to mechanical perturbations of various kinds leading to plasticity, fracture, flow etc. This year, the workshop featured speakers from India, France, Spain, and Singapore, both theorists and experimentalists, signifying the need for an interdisciplinary approach to develop a common understanding across a wide range of materials, both hard and soft. The workshop also had strong participation of scientists from IGCAR, thus providing a scope for increased contact and exploration of possible collaborations between IMSc and IGCAR on the physics of materials.

Quantum Black Holes: 7th Jan 2019

Sujay Ashok organized a public lecture on an encounter between Hawking and Ramanujan (part of the Nag memorial lecture series) by Atish Dabholkar, International Centre for Theoretical Physics. Website: https://www.imsc.res.in/outreach/lectures/posterNag_AD.jpg

Science at the Sabha : 24th Feb 2019

This year, Science at the Sabha, IMSc's flagship outreach program, was held as usual at the Music Academy on Sunday, 24 February. The talks are aimed at anyone with an interest in science, irrespective of age or background. Science at the Sabha is free and open to all. This year the speakers were: Sandhya Koushika (TIFR), Vijay Shenoy (IISc), Harini Nagendra (APU) and Sitabhra Sinha (IMSc). This event was attended by about 1200 people.





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From Learning to Doing: Science, Education and Public Service in Chennai

This panel exhibition was unveiled at Science at the Sabha, highlighting Chennai's traditions in science, mathematics, education and public service, along with the people and institutions that helped to define them.



Science at the Sabha and the accompanying exhibition received extensive press coverage:
<https://www.thehindu.com/sci-tech/science/fourth-edition-of-science-at-sabha/article26365816.ece>
<https://timesofindia.indiatimes.com/city/chennai/science-at-the-sabha-educates-youngsters-and-enthrals-old/articleshow/68143474.cms>

Organizers: Gautam Menon, KN Raghavan, Varuni P

website: <https://www.imsc.res.in/triveni/2019/>

photos: <http://ekalavya.imsc.res.in/node/3782>

Indian Women in Science Exhibit display: February - March 2019

IMSc in collaboration with The Life of Science (TLoS) produced a poster exhibition on *Indian Women in Science* and premiered it at last year's Science at the Sabha (2018). It consists of 13 posters highlighting the life and work of women scientists of the country. The exhibition was displayed at Women's Christian College, Chennai, (25th Feb -- 1st March) and Stella Maris College (2nd March -- 7th March)



<https://photos.app.goo.gl/1zRSUeVH9avQwmix8>

<https://photos.app.goo.gl/tC5cwGyoKT2Dgdu76>



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UN International Day for Girls and Women in Science: 11th Feb 2019

IMSc hosted about 180 girls from local schools to celebrate the UN International Day for Girls and Women in Science. The program included lectures by young women in science and mathematics: Shanti Bhattacharya (IITM), Prajakta Nimbhorkar (CMI) and Satyavani Vemparala (IMSc). IMSc students organized a series of demonstrations. In association with Nandita Jayaraj (TLoS) and the American Consulate (Chennai), we screened the film *Hidden Figures* (2016), the story of a team of female African-American mathematicians who served a vital role in NASA during the early years of the U.S. space program.

Organizers: Meena Mahajan, Varuni P.

