Sarga Samvad

Sanskrit: creative dialogues with *Imaginative Innovators*

Series of Brainstorming session on

ANCIENT INDIAN MATHEMATICS

14TH – 15TH MAY 2018

AGASTYA CAMPUS CREATIVITY LAB,
KUPPAM

Organized by
AGASTYA INTERNATIONAL FOUNDATION
SUPPORTED BY R. JHUNJHUNWALA FOUNDATION & OTHERS

In partnership with
THE OBEROI FAMILY FOUNDATION

Introduction

Agastya International Foundation conducted the brainstorming session on 'Indian Mathematics' on 15th May 2018 under Sarga Samvad program.

'Sarga Samvad' program - an exciting new platform established by Agastya in collaboration with The Oberoi Family Foundation for providing imaginative innovators a unique opportunity to Experiment, Empathize and Express. Agastya's 172-acre bio diverse creativity lab provided a space for these individuals to experience the **Ah! Aha! Ha-ha** moment and rekindle their enthusiasm and artistic spirit

Objective

Indian mathematics emerged in the Indian subcontinent before 1200 BCE. After 18th century Indian mathematicians were directly involved in the development of global mathematics. Thus, Indian Mathematics contributed profoundly to the field of mathematics within a historical global context. It strongly links itself to the world-wide advancement of economics and technology.

With the above context, Agastya is planning to expand its existing interactive Math park with a Learning Centre on Indian Mathematics at its Creativity Lab in Kuppam, Andhra Pradesh, India. The center is meant for highlighting the contribution of India in the field of Mathematics and for familiarizing Government School Students on the subject for them to consider taking this field in their future educational - career directions.

The brainstorming session was focused on bringing experts in this field to Agastya's campus, introduce them to philosophy of Agastya, the existing interactive Math lab and engage them in a creative discussion on relevance of Indian Mathematics and how to integrate it into present day curriculum.

Key Focus: setting up of an interactive learning center for Indian Mathematics at Agastya's Kuppam Campus (Structure: concepts, design, curriculum, models and methods)

In addition, the sessions focused on

- Relevance of Indian Mathematics in present day school education
- Suitable pedagogies to disseminate the subject
- Available resources, courses - for further learning
- Future career prospects connected to the field of Indian Mathematics
- Importance of linguistics in the making of the curriculum

Visiting Experts

Dr. M. D Srinivas
Chairman, Centre for Policy Studies,
Chennai

Dr. M D Srinivas holds a PhD in Theoretical Physics from the University of Rochester, New York, USA. He also has over three decades of teaching experience and many papers, both in national and international journals, to his credits.

He has traced the history of Indian mathematics for the past two millennia. He has shown how mathematics in India evolved independently of European mathematics and how it is fundamentally different.

Areas of Specialization

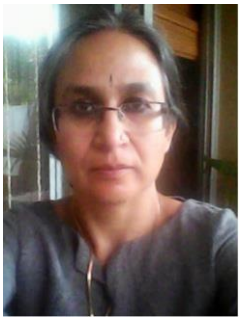
- Theoretical Physics (Conceptual and Mathematical Foundations of Quantum Mechanics)
- History and Philosophy of Science (Scientific and Technological Tradition of India: Methodology of Indian Tradition of Science, Study of Source Texts of Indian Mathematics and Astronomy)
- Indian Society, Economy and Polity

Dr. K. Gopinath
Professor, Department of Computer Science and Automation,
Indian Institute of Science,
Bengaluru

Dr K. Gopinath is professor at Indian Institute of Science in the Computer Science and Automation Department.

His research interests are in the computer systems area (Operating Systems, Storage Systems, Systems Security and Systems Verification).

He is currently an associate editor of IEEE Computer Society Letters and of ACM Trans. on Storage. His education has been at IIT-Madras (B. Tech'77), University of Wisconsin, Madison (MS'80) and Stanford University (PhD'88). He has also worked at AMD (Sunnyvale) ('80-'82), and as a Postdoc ('88-'89) at Stanford.



Dr Shailaja
Adjunct faculty,
National Institute for Advanced Studies,
Bengaluru

Dr Shailaja D Sharma has PhD in Mathematics from IIT Bombay.
She is a statistician with a background in development research and tremendous enthusiasm for insightful dialogue.

She was earlier with the World Bank and Shell. She has worked in the energy and education industries, the development sector and the entrepreneurship ecosystem in India. During her 12 years in Shell India, she worked closely with the Scenarios team, using the findings in climate policy advocacy.

During her 12 years in Shell India, she worked closely with the Scenarios team, using the findings in climate policy advocacy.

HIGHILIGHTS OF THE BRAIN STORMING SESSION

"Approach and steps to bring 'Indian Mathematics' into present day education and to our interventions serving Government School Children of India" was the topic of Sarga Samvad held at Agastya International Foundation, Kuppam on 15th May. The topic was deliberated on by 4 eminent speakers namely Prof.MD Srinivas, Prof. Gopinath, Dr. Shailaja and VSS Shastry.

All the 4 speakers, during their exposures, highlighted the merits and relevance of introducing Indian Mathematics in schools. They were of the opinion that Indian Math emphasizes practical application of Math in daily life and children will find it useful and can easily pick it up.

Dr Srinivas, while tracing the origin of Indian Math, exposed that ancient India during Vedic period did contribute a great deal to the world's mathematical heritage. He said India has witnessed steady mathematical developments over most part of the last 3000 years, throwing up many interesting mathematical ideas well ahead of their appearance elsewhere in the world.

Dr Gopinath, in his talk, provided several examples for daily life for appreciating the significance of Indian Math over Modern Math. Dr Gopinath provided several illustrations for Agastya's Math Lab to concentrate on in integrating Indian Math into its program.

Prof Sastry, a Math practitioner, strongly emphasized that Math teachers in schools should go beyond the textbook and introduce children to the various ways of using Indian Math. There is total ignorance of Indian Math in our teachers as it is not dealt either in schools or in teacher training colleges. Prof Sastry lucidly explained how our Indian tradition and culture is embedded with Math in its art, religion and culture – Rangoli, Havans, temple architecture, etc.

Dr Shailaja was of the opinion that since Indian Math is difficult to understand, writings about Indian Math is required. She emphasized for serious studies on Indian Math and producing quality books connecting the old with the new is required.

The program was well attended by staff of Agastya, students from Dravidian University and students from the neighboring schools.

GALLERY

Dr M.D. Srinivas speaking about Indian Mathematics

Dr Shailaja providing her views on Indian Mathematics

Dr. Gopinath explaining about the elements of Indian math

TK Prasannamurthy, a high school educator, interacting with the experts

Young Instructor Leader students learning the elements of Indian Mathematics

Dr. Ravi, Agastya's Academic Director, summarizes the session and thanks the expert panel