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2023, VOL 8; ISSUE 1-2



QUARTERLY E-MAGAZINE

Sree Chitra Tirunal Institute for Medical Sciences & Technology
Trivandrum, Kerala, India

CHITRA DHWANI

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Disclaimer: *The views and opinions expressed in this magazine are those of the authors and do not necessarily reflect the official policy or position of SCTIMST*

From Editor's Desk....

A Letter from the Editor

Dear All, I am honored to share the fact that "CHITRA DHWANI" is completing one decade of its existence with the release of its current combined issue (1-2) of the year 2023 by our honorable Director, Dr Sanjay Behari. I recall that in 2012, in one of the meetings when Prof K Radhakrishnan (Director at that time) had expressed his thoughts to me for starting an vocal digital magazine of the Institute, I had gratefully accepted the offer as the Chief Editor. It was a real challenge to me as I was quite new in the Institute (had joined 2 years ago) but this opportunity offered me to explore, revisit and understand the history of SCTIMST, its staff and the rich heritage in all the scientific, social and the clinical domains. I initiated this endeavor with the extraordinary support of all the Chitra members. Finally, in 2013, we released its 1st quarterly issue of the e-zine with the name CHITRA DHWANI which was an instantaneous hit. We were successful in realizing the objectives of showcasing the pulse and vibration of the major activities by Chitra members. It was gratifying to find such overwhelming response and energetic support from everyone in the SCTIMST. It helped me personally in jelling with people as a result we were successful in sustaining the e-zine year after year. In 2016, Dr Srinivas G took over the baton of running the e-zine nicely until 2018. In 2020, during COVID pandemic, Prof Asha Kishore (then Director) asked us to restart and compile a special issue for capturing the activities carried out during hard times.

The current combined issue is covering all the events held from 1 Jan- 30 Jun 2023. In this issue, Golden words, i.e. excerpts from the speeches of Dr VK Saraswat, our Institute President; Dr VK Paul, Niti Aayog member and Dr Rajesh Gokhale, Secretary, DBT are reverberated to bask again in the pragmatic ideas of their thoughtful visions about the emerging needs and contribution of SCTIMST in research, medicine and technology of the country. We have covered almost every celebration including Annual Convocation, GP Oration, SAMVAAD lectures and activities carried out by the Chitra family members.

I thank each and every member for their valuable support and creative contributions in this journey. I hope you will enjoy this mega issue showcasing proud moments of successes.

Get regular sleep & enjoy Healthy life.

Thanks & Best regards

Kamalesh K Gulia, PhD
Chief Editor, Chitra Dhvani

Scientist G & Head
Division of Sleep Research
BMT Wing, SCTIMST



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Patron: Director, SCTIMST

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Feedback may kindly be sent to:
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(The articles and artworks are invited for the next issue and may be sent to the above mailbox. Articles includes shorts stories, experiences of alumni, simplified version of scientific work or technology, poems, and travel anecdotes etc. Photography, cartoons, artwork (unique histology pictures), paintings and sketches are most welcome. Kindly send your contribution containing details of our Name and Department)

"Progress is impossible without change, and those who cannot change their minds cannot change anything"
George Bernard Shaw

Testimonials

Listening to **Chitra Dhwani** is a joy. It updates us about events and achievements in Chitra and keeps alive its connection with alumni, current and past employees and friends everywhere. Long may the Dhwani resonate!

Prof MS Valiathan, Founder Director

I congratulate successive editors of **Chitra Dhwani** for their enthusiasm and hard work and for sustaining it for 10 long years. From being a simple medium for the reportage of events and happenings, the newsletter has transcended into a chronicle of the unfolding history of SCTIMST, and of the saga of achievements of the illustrious fraternity of individuals who have traversed the institution's hallowed portals. May **Chitra Dhwani** continue to enhance its exacting standards with every issue that sees the light of the day, and be reflective of the continuous progress of the institute.

Dr Sanjay Behari, Director, SCTIMST

A decade of sincere and brilliant effort to keep the "Dhwani" reverberates in our hearts. Congratulations on 10th anniversary of our magazine and keep up the exceptional work.

Dr HK Varma, Head, BMT wing

The year 2023 marks an important milestone for **Chitra Dhwani** as the in-house e-magazine of SCTIMST begins its 10th year of publication. It has experienced tremendous evolution and growth over the past decade. The major accomplishments by doctors, engineers and scientists of the institute are reflected in a glorious manner in Chitra Dhwani. As the Institute continues to move forward by offering innovative research and supporting the advancement of the biomedical and health associated research, the e-magazine acts as a mirror which showcases the outcome and benefits. The magazine focuses so effectively on workmanship from both a world-wide comparative and deep-time perspective. The magazine's engagement with issues of social process set a standard for stimulating international research among the scholars. Congratulations on the occasion of 10th anniversary. The academic fraternity commend you for your efforts and continue to enjoy reading each new issue.

**Dr Krishnakumar K, Professor and Head
Dept of Neurosurgery & Associate Med Supdt**

Chitra Dhwani is an impressive report of every news happening in the institute. The team demonstrated its commitment to capture finer details of the news. On this occasion I admire and congratulate team led by Dr Gulia.

**Dr Roy Joseph, Dean
(Scientist G, Division of Polymeric Med Devices)**



Testimonials from Readers

"The diverse range of articles, thoughts, research and 'art in science' columns and the development news of the institute showcased within the pages of **Chitra Dhvani** were of immense value and inspiration. The comprehensive coverage across inter-disciplines ensures that readers get a well-rounded understanding. Thank you for your incredible work in popularizing the frontiers of knowledge about the wonders of science."

Shri Willi Paul (Scientific Officer, Instruments Central Analytic Facility, BMT wing)

"As a student, reading the magazine helped me stay connected with the SCTIMST community. The editors really care about making sure every event and update gets noticed and helping us grow"

Shri Amal Wilson Varghese (PhD Scholar)

Chitra Dhvani showcases the vibrant and talented research community that 'Chitra family' is. The magazine also caters to bring forth the literary and creative aspirations of the employees.

Dimple Gopi (Library cum Doc Officer, BMT wing)

I appreciate the efforts of the team behind the **Chitra Dhvani** magazine especially Dr Kamalesh K Gulia, Dr Manoj Komath, Dr Amita R, Er Suresh Kumar & Dr Jissa VT and the team. The magazine gives opportunity for all employees to show their talents as well as it gives a picture of the contributions of different departments in the institute. I wish all the success for the future and extend our sincere co-operation for sustaining the magazine.

Smt Nirmala MO (Nursing Superintendent)

Chitra Dhvani, the voice of the Chitra family!

Our institute, with many scientific disciplines spread over two distant campuses, yet having shared goals to serve the nation by harnessing technology for healthcare, is unique. **Chitra Dhvani**, the e-magazine published quarterly, has much relevance in this context. It helps us to know each other, not exclusively based on the scientific outputs alone, but as persons with flesh and blood. Chitra Dhvani helps us express and share our talents in art, sports, and literary fields. Let me admit frankly that Chitra Dhvani helped me to appreciate and admire the talents of at least a couple of my acquaintances in the institute. A big salute to the team behind Chitra Dhvani on its 10th year!

Dr Biju Soman (Professor & Head) Achutha Menon Centre for Health Science Studies)

"**Hurrah!** To **Chitra Dhvani** for completing ten successful years chronicling the events at SCTIMST and the views of SCTIMST family and their research. I have always awaited eagerly for each issue. Congratulations!!!"

Dr A Maya Nandkumar (Scientist G and Head, Division of Microbial Technology)

Chitra Dhvani has always been a comprehensive report of all the activities of all the staff of the institute. It gives an overview of the pulsating life of Sree Chitra. Colourful pictures make the e-magazine attractive. My suggestions would be to include short articles by different faculty based on their interests, like photography, poetry writing, short story writing, scientific awareness creation using simple language to explain procedures done here, important citizen friendly programmes initiated by SCTIMST and their details and an overview of the newly started Saturday Science Fest. It is good to see quarterly e-magazine now thus including more matter in the form of photographs and not missing out even a single programme that has happened in Sree Chitra. This is also a permanent record of our activities and can be referred to when we have a doubt on how it was conducted and who all were involved, many years later. My hearty congratulations to Dr Kamalesh Gulia and team for their tireless efforts in bringing out this unique magazine on our beloved institute.

Dr Kavita Raja (Professor (Sr Grade) and Head, Department of Microbiology)

"I must congratulate you and your Editorial team for the excellent content of the **Chitra Dhvani**. The articles in the e-zine were of good standard and very informative. I wish more such stimulative editions of this e-zine will be published under your Editorship."

Dr Debasish Gupta (Professor and Head, Department of Transfusion Medicine)

Chitra Dhvani, our in-house magazine provides an overview of the recent happenings at our Institute (which somebody might have missed) and also comes out with content which are interesting and innovative. Thanks to the editorial team for their efforts and creativity.

Dr Harikrishnan (Professor & Head, Department of Cardiology)

Chitra Dwani help us to join together and enhance our team spirit. All the best for its 10th Anniversary.

Shri Rajkrishna Rajan, Er F (Intellectual Property Rights Cell)



Golden Words: Excerpts from the Convocation Message 2023

Namaskar! Greetings to all of you. Our Institute is just 4 decades old. Despite its short period of existence, it has generated considerable impact on the national scene in the areas of advanced Clinical Care, Biomedical Engineering Technology as well as Public Health Sciences. Despite its small size when compared to other Institutions of national importance, its focused domains in area of cardiac and neurosciences as well as its achievements in health care are well known. This is exemplified in its upholding the NIRF ranking of 9th among all the medical institutes of country in year 2022–2023. I congratulate the institute for this achievement! I am proud to state that in the Biomedical Engineering science section category, the Institute has ranked among the best in India & Asia.

In the last one year, several other important milestones were achieved - some of the noteworthy ones included retaining the status of Institute of National Importance by the act of parliament, and commissioning of the Combination Devices Block after inauguration by the Honourable Minister for Science and Technology, Dr Jitendra Singh. This new block will enhance the interdisciplinary endeavours of the faculty in achieving the development of combination devices. The institute is recognized for its focus on upholding the translational standards of medical devices in India. It is heartening to note that the work on the hospital building block under the PMSSY scheme is progressing in a time bound manner. This ensures that we will have a nine floor ICU hospital, private patient rooms, operation theatres, catheterization labs, parking lots and a service block by the end of this financial year. That will make our Institute one of the largest Cardiac and Neurosciences Centres in India.

Our Institute has already established a globally accepted system for testing services so that its industrial partners and clients may use its test results for product certification abroad like the CE marking and the USFDA approval. This effort became successful in 2003, when Le Comite Francais d'Accreditation (COFRAC) of France certified the Institute's testing services. This has helped many medical devices industry partners in developing their products. The COFRAC & NABL accreditation process were completed for this year without any issues.

The institute's Technology Business Incubator, TImed, is encouraging and providing help to new Start-up companies to showcase their potential. As a result, several new technologies are being commercialized.

I congratulate the staff and students for the exemplary clinical care and for winning several national and international accolades, awards, patents, and for organizing educational conclaves, conferences, workshops as well as for the new initiatives during the year.



Dr Vijay Kumar Saraswat
Honorable President of the SCTIMST
(Member, Niti Aayog, Government of India)

In academics, SCTIMST excelled with 271 publications with an average impact factor of 4.7. The total numbers of granted patents were 32 Indian and 2 International & 17 design registrations. In the last 2 years, 8 technologies were transferred to Industry. I congratulate all the research teams and investors.

The newer clinical interventions included transcatheter aortic valve replacement, cryoablation for atrial fibrillation, non-fluoroscopic closure of atrial septal defect, heart in pregnancy clinic for both mother and child, and FONTAN clinic. Outstanding work was done in the area of Stroke care. Record number of surgeries for Parkinson's disease, Epilepsy and for functional neurological disorders were performed. Endoscopic skull base and revascularisation surgeries were also special areas that developed well. Radioimaging facility for dural arterio-venous fistula treatment has been started. Voluntary blood donation by Transfusion Medicine dept was also exemplary. Energy conservation initiatives by SCTIMST are the need of the time. Work on Mycobacterium TB kit that has been approved by the WHO, various biological innovations, blood based biological sensors and unique diagnostic kits are noteworthy achievements.

AMCHSS excels in Ethics, and in several public health issues including an established system for the follow-up of patients as well as tele-medicine consultations. The patient portal software, the GeM software as well as the single treasury account software are commendable initiatives. Ayushman Bharat scheme benevolent fund of 47.01 crore helped in treating the poor sections of the society.

The new Journal of Sree Chitra is an excellent venture. My heartiest congratulations to the Editorial team for this initiative. I acknowledge the Editorial teams of newsletter **Chitra Dhvani** and **Chitralkha**.

I end my message by citing the quote by George Stillman Hillard "**Excellence in art is to be attained only by active effort, and not by passive impressions; by the mainly overcoming of difficulties, by patient struggle against adverse circumstance, by the thrifty use of moderate opportunities.**"



Golden Words: Future of Tertiary Healthcare & Technology

SCTIMST is a lasting testimony to the visionary foresight of its founding parents, in particular Dr MS Valiathan, and the royal family of Travancore. They conceived this wonderful temple of learning in Science. This institution is a tribute to a very unique model in health sciences. The hospital, the biomedical engineering wing and public health wing are uniquely blended in this institution. This unique concept has always fascinated people like us who have seen the evolution of the Institute in the last four decades.

As a tertiary medical centre, SCTIMST stands as a beacon of hope for thousands of patients who come here not only from Kerala, but also from all over the country and indeed from beyond the shores of India. The multi-dimensional achievements of SCTIMST are truly unique, marked by delivered products, public health initiatives, translated devices, patents, bringing out solutions to scientific problems and the high-end health care initiatives. The visit to the campus also reminds oneself of the rich heritage of this place!

The students and scholars who are graduating today will now don the new role of being super-specialty doctors. You have attained this new landmark in your life through hard work and commitment to serve the nation and the humanity. However, never forget the stellar role played by your parents in this regard. Today your parents' wishes and prayers have been answered. We are what we are because of our parents. Therefore, I urge you never to overlook the noble responsibility of looking after your parents in their old age.

Having acquired the Sree Chitra brand by your ability and hard work, you are now expected to uphold the idealism and expectations that this association symbolizes. This brand is not easy to acquire. A lifelong commitment is expected from you to uphold the values that this institute represents and that indeed is the rightful "Gurudakshina" that your teachers expect from you.

I marvel at the SCTIMST model that blends public health, clinical care and engineering sciences that created this institution. I would like to see it being continuously enhanced. I also hope that by 2030, at least 5 institutions based on the SCTIMST model will come up in the country. You have demonstrated the success of this model.

Considering the significant achievements and the progress in the sphere of health sector, the period of the last 9 years has been an amazing golden phase in the country. Ayushman Bharat, the universal health scheme covers over 60 crore people of India through a cashless and paperless mechanism. Another important development is the creation of 1,50,000 health and wellness centres (HWCs) that constitute the primary care foundation of India. These centres are the transformed subcentres and primary health centres but not just in name but in services as well.



Dr Vinod Kumar Paul
Member, Niti Aayog, Government of India

For our nation, these institutions fulfill our expectations of covering approximately a population of 7000-8000 with a team led by a mid-level provider. A workforce of over 1,20,000 additional health professionals who are typically BSc qualified Nurses, has been created. The network of HWCs are imparting curative services, health promotion activities, as well as public health, and this journey has just begun. I expect AMCHSS to play an important role in crafting HWC-based scalable primary care models for preventing non-communicable diseases and care of the elderly and palliation sectors for which Kerala is well known.

Further, in the span of 9 years, there is a 78% increase in medical colleges (from 387 to 692). We are dominated by Govt medical colleges. A significant contribution to health care comes from 157 new medical colleges that have been started utilizing a grant from the Union Govt through special programs. MBBS seats have doubled. Today, we have more than 1 lakh MBBS seats. We already have reached a point where the WHO recommended ratio of 1 doctor per 1000 population is achieved. Post-graduate (PG) seats have increased by 113% under this government (From 31000 seats to 67000 seats). Tele-medicine has also become a norm. The e-sanjeevani portal has crossed 9.2 crore consultations. SCTIMST is delivering outstanding PG super-specialty services. The nation is looking upto Sree Chitra for guidance.

On the technology front, the focus of diagnostics in India has a huge potential. In the wake of Covid – 19, hundreds of diagnostic kits were developed. The success story of indigenous vaccine development during the pandemic is well known. India's medical device market was estimated at 10.36 billion USD in 2020, which is expected to grow at a rate of 37% by 2025. Sree Chitra can and must play a comprehensive role in innovating diagnostics especially the point-of-care tests.

SCTIMST as an institution of excellence has serves the nation very well. It is time for your leadership, faculty, scientists and staff to set sights on global benchmarks, and steer the Institute to even higher trajectory of eminence during the Amrit Kaal.



Golden Words: India to tap the strength in Biotechnology

If we wish to connect to reality, we perhaps should make an attempt to think of the challenges we face and how we can change situations with our tiny efforts. One of the key concepts is the challenge of middle-income trap. These is a hypothetical trap countries may get into, due to internal contradictions and paradoxical situations. This term was introduced first in 2006 by the World Bank's economist Homi Kharas, which says a developing country with fast growing economy finds it difficult to eventually break into the rank of a rich nation. For example, the once most promising economies like Mexico, Brazil and Turkey never turned into the prosperity of Western Europe or Japan – because they ended up in the 'Middle-Income Trap'. I believe, this can happen with Institutions, with companies, and sometimes, with individuals as well. The challenges and problems that continue to be circulated around it, should be discussed.

We have to consider the supporting evidences of such a trap, and find what a middle-income country can do to spring free of it. The World Bank classifies 107 countries as 'middle-income'. They have the combined GDP of 31 trillion and a population of 5.7 billion (holding the largest part of the world). The context in each country is so diverse that the question "what drives the middle-income growth" has no easy answers.

We have to think about how can a developing country like India, the fastest growing economy, the 5th largest economy by nominal GDP and third largest with purchase power parity, acts in a way that we do not get into the trap. I very strongly believe that only a technologically empowered India can escape this trap.

Budding professionals and researchers trained in SCTIMST and from other affiliated Institutions together utilize the acquired wealth of technical knowledge and skills. However, just utilizing the skill sets in the ever-challenging world, with rising societal expectations won't suffice. It is becoming essential that professionals contribute across cross cutting interventions and tackle complex challenges of the country. It no longer suffices to survive in your own cocoons where problem starts and ends there itself. The future of the entire Nation lies in your perspective. Clearly you can see the success of the measures enacted by the Government during the Covid pandemic led by Prime Minister and implemented by a relatively small community of scientists, health professionals and biotech companies. It is something to be proud about. Also I am proud about the efforts by the Department of Biotechnology and the Public Sector Undertaking Company BIRAC working together. We now have the capacity to produce vaccines using any platform DNA, RNA, protein subunit, inactivated virus or



Dr Rajesh Gokhale

Secretary, Dept of Biotechnology, Govt of India

vector based ones, which can be delivered via the intra-dermal, intra-muscular or intra-nasal route.

The whole challenge lies with us, how can we reconsider these technologies for other diseases to solve the health care problems of our country. The INSACOG Genomic Surveillance to track virus variants is a novel venture as we succeeded in the Nation-wide tracking of the Covid.

There are many learnings from these that we need to capitalize upon to solve our problems. For example, the major health problem that had been ailing our country for decades is tuberculosis. In tackling the TB challenge, there are two problems. One is the multidrug resistance and the other are the extrapulmonary manifestations. The latter increase at a much rapid pace and TB cannot be considered to be a disease of lung alone anymore. DBT in its endeavour is trying to develop a catalogue of existing and emerging drug resistant mutations by performing the whole genome sequencing of more than 30,000 strains of mycobacterium tuberculosis from active patients to develop a centralized biorepository of both data base and mycobacterium strains in India. This will help to map the genetic diversity of pulmonary and extrapulmonary isolates and also the associated treatment outcomes using advanced AI tools.

TB is also an example of how an old paradigm got stuck with us for long periods of time. One must take into consideration that the host pathogen dynamics is constantly co-evolving and we have to reconfigure the host pathogen interactions and their co-evolutionary processes.

Therefore, my recommendation to the fresh graduates is to focus on real world challenges that require intelligent analytical forward-looking thinking rather than just getting embroiled in traditional mundane issues where you continue to think and survive without follow up stages. Life is multi-directional and full of opportunities. All that needed is an open outlook and willingness to accept life's fluidity. A single-track mind set with no 'plan-B' might not be a great idea.



New Initiatives

Heart in Pregnancy Clinic

Departments of CVTS & Cardiology
Sree Chitra Tirunal Insitute for Medical Sciences & Technology
Thiruvananthapuram

&

Department of Obstetrics & Gynaecology
SAT hospital Government Medical College
Thiruvananthapuram



Inauguration of the 'Heart in pregnancy' clinic

Comprehensive high risk pregnancy care in women with heart disease

Wednesday, March 15, 2023, 2.45 pm

Venue : Patient waiting area 1, SCTIMST

The Heart in Pregnancy clinic, an **SCTIMST-SATH JOINT INITIATIVE**, first of its kind clinic for Comprehensive care of high risk pregnancy in women following cardiac surgery, was inaugurated by Ms Tinku Biswal, IAS, the Honorable Principal Secretary Health and Family Welfare, Kerala state, at Patient waiting Area-1, SCTIMST on 15.03.2023, in the presence of Prof Dr Sanjay Behari, Director, SCTIMST-Trivandrum, Prof Dr Kala Kesavan, Principal, Government Medical College, Thiruvananthapuram, Dr Lakshmi Vinodh, Department of Obstetrics and Gynecology, SAT Hospital, Thiruvananthapuram Prof Dr Rupa Sreedhar, Medical Superintendent, SCTIMST; Prof Dr Baiju S Dharan, HOD CVTS; Prof Dr KM Krishnamoorthy HOD Cardiology; Prof Dr Shrinivas V G, HOD Anesthesia; Prof Dr Suneel PR, Anesthesia; Dr Deepa S Kumar, Additional Professor, Department of Cardiology, Dr Arun Gopalakrishnan, Additional Professor, Department of Cardiology, and Dr Sabarinath Menon, Professor, Department of CVTS, SCTIMST and other faculty, staff and students of the Institute.

The inauguration was preceded by a Public Interaction Session. There were talks on Care of children after cardiac surgery by Ms Anjusha, N/O CHICU, Menstrual cycles and Heart Disorders for adolescents and young adults by Dr Maya Devi B, Professor (CAP), Department of O&G, GMC, Alleppey; Supporting Children with Congenital heart diseases, a session for parents by Dr Arun B Nair , Additional Prof, Department of Psychiatry, GMC, Thiruvananthapuram.

Welcome address and an Introduction on the need for the clinic was given by Dr Sowmya Ramanan, Additional professor, Department of CVTS. Vote of thanks was given by Dr Sudip Dutta Baruah, Additional Professor, Department of CVTS.



Heart problem in pregnancy is a leading cause of maternal death in high-income countries. Availability of integrated and tailored healthcare services, and timely information to such women will increase joy and outcomes of pregnancy.



New Initiatives/ Breaking News

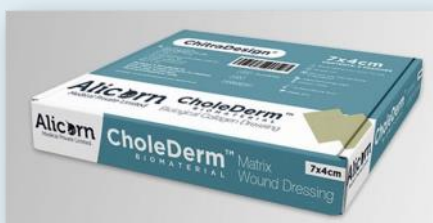
Cholederm: Indigenous Device

The Division of Experimental Pathology develops the first indigenous animal-derived Class D biomedical device

The Division of Experimental Pathology has been working on animal-derived tissue engineering scaffolds in the past 15 years. They have decellularised porcine gall bladder and prepared different forms of the scaffold: lyophilised membranes and powder/gel formulations. These scaffolds induced faster healing of wounds of skin, subcutis, skeletal muscle and cardiac tissue with minimal scarring in experimental animals. Membrane forms of the scaffold, identified as **Cholederm**, healed different types of skin wounds including incision, lacerations, burn and diabetic wounds in rat, rabbit or dog. The scaffolds promoted a pro-regenerative reaction mediated by M2 macrophages and modulated the nature of collagen (type I vs type III) deposition in these wounds. The research group has published over 20 original papers, eight granted patents and won several laurels at national and international scientific platforms including two World Biomaterial Congress awards.



In 2017, the technology for fabricating *Cholederm* was transferred to M/s Alicorn Medical Pvt Ltd, an incubate of TIMED. The Division guided and supported the firm in preparing documents for safety evaluation of the product as a Class-D Medical Device. Recently, the Central Drugs Standards Control Organisation granted Manufacturing Licence to firm for commercial production and sale of the product. This is a milestone achievement for both the Division of Exp Pathology and M/s Alicorn Medical Pvt Ltd.



Patience, persistence, and perspiration make an unbeatable combination for success. Napoleon Hill

NIRF Ranking: SCTIMST 10th

NIRF Ranking 2023: SCTIMST Ranked 10th in Medical Category



OMSTH: the New Journal



Opinions in Medical Science, Technology and Health, the New Journal of SCTIMST



New Initiatives

Prof RM Varma Memorial Neurosurgery CME, 27 May 2023

Continuing Medical Education (CME) program in honour of the late Dr RM Varma



The Department of Neurosurgery, SCTIMST, Trivandrum along with its alumni, conducted a CME program in honour of the late Dr RM Varma, founder Director, NIMHANS, Bangalore, India and the person who guided the Department of Neurosurgery, SCTIMST, in its fledgling years. This CME programme was inaugurated by Director, SCTIMST, Dr Sanjay Behari. In his address, the Director, spoke on the need for constant improvisation of the curriculum for Neurosurgical training in India. This will put our neurosurgeons on par with the best in the rest of the world. Dr Ramkrishna Easwaran, renowned Neurosurgeon from Tiruchi, Tamilnadu recalled the role of Dr RM Varma in the Indian Neurosurgical scenario of those days and the founding of the National Institute for Mental Health and Neurological Sciences. Her Highness Pooyam Tirunal Gowri Parvati Bayi, from the Kowdiar palace and niece of the founder of our Institute spoke about how the late Maharaja Chithira Tirunal Bala Rama Varma funded the SCTIMST and the role of late Dr RM Varma in making it happen. She spoke about the discussions that preceded the setting up of the Institute and the vision that the founder and those around him had about its future. She recalled with pride, the stature that SCTIMST has in our society. She extolled all the employees to keep the Sree Chitra flag flying with matchless service to mankind.

The program included the conferment of the **Dr RM Varma Distinguished Neurosurgical teacher award on Prof Suresh Nair**, former HOD, Neurosurgery and former Dean, SCTIMST and renowned academic. Prof Krishnakumar K narrated the summary of the academic achievements of Prof Suresh Nair. Also, the Nursing Services of the Neurosurgical Operating Rooms published in **Neurosurgery Manual for Operating Rooms in Neurosurgery from a Nursing perspective** on this occasion. This book has been of great demand from hospitals which conduct neurosurgical procedures.

Brain surgery couldn't happen without the patient's own active voice to guide the work. The patient is part of the surgical team here, perhaps the most important part, and above all, that's what makes neurosurgery different.
Sam Kean





SAMVAD Lecture series

30 March 2023

Title of talk: Working in Forensic Medicine: Walking in a Woman's Shoes



Dr Vina Vaswani

Director, Centre for Ethics, Dept of Forensic Medicine & Toxicology, Yenepoya University, Mangalore, India

Perceiving an increasing gap in ethics teaching and practice in health care and a decline in the public perception of the doctor-patient relationship, she proposed establishment of a dedicated Centre for Ethics in the University. She started several first in India ethics-specific academic programs including Postgraduate Diploma in Bioethics & Medical Ethics (PGDBEME) since 2011, PGD in Clinical Ethics (PGDCE) since 2012. She is the Principal Investigator for Yenepoya University Fogarty International Research Ethics Masters Program for India (NIH Grant No. 1R25TW010305) since 2017. This is the first Masters program in Research Ethics for the whole of India.

Prof Vaswani is a qualified bioethicist with a background in Forensic Medicine & Toxicology. She completed her Masters in Bioethics in 2008, as an Erasmus Mundus scholar from three European Universities (Belgium, Netherlands and Italy). She also has PGD in Medical Law & Ethics and Human Rights Law, from National Law School of India Univ, Bengaluru. She completed her PhD from Dublin City Univ, Ireland in 2020.

She has been appointed as Member, "Board of Directors of International Academy of Bioethics" by International Association of Bioethics 2022. She received the Lifetime Achievement Award conferred by the Karnataka Medico Legal Society in its 30th Conference in JSS Medical College Mysore on 25 Nov 2022.



25 April 2023

Title of talk: My experiences in starting a transplant program in Tamil Nadu



Dr Amalorpavanathan Joseph

Member State Planning Commission Govt of Tamil Nadu

Dr Amalorpavanathan Joseph, born in the Chintadripet area of Chennai, completed his schooling at the Chitradripet High School and his Pre-University Certificate (PUC) from Loyala College, Chennai. This exposure opened a broad vista of academic, scientific and social world to him. He developed an interest in the social issues that affect life and livelihood. He did his undergraduate medical degree from Kilpauk Medical College, Chennai, DipNB in general surgery and joined the Tamilnadu Govt Health Services. While in service, he did his MS at the Stanley Medical College, Chennai, yet another illustrious medical institution. After completing the MS, he worked at Madras Medical College, Chennai in general surgery for a decade. He then did MCh in Vascular Surgery at Madras Medical College and became a faculty in the same department.

It was during that time that Dr Amalorpavanathan was asked to organize the Cadaver Organ Transplant Program for the state which became a model program across the country and has been running successfully since then. Dr Amalorpavanathan demitted office in 2016, and engaged in private practice.

The Govt of Tamil Nadu required his services again as Member, State Planning Commission with the mandate to address health and nutrition issues. He is a mentor to many surgeons & physicians. He is inspiration to Drs across the country.

23 June 2023

Title of talk: Chemical Entities in Life imaging



Dr Anil Kumar Mishra

Director, INMAS, Institute of Nuclear Medicine & Allied Sciences, DRDO, Ministry of Defence, New Delhi

Today, Medical management are solely driven by Tools and Technology to reveal perturbation of biochemicals that are manifested at molecular level. To enhance the capabilities of all the tools that exist for imaging non-invasive ways are dependent on smart molecules to delineate between diseases and normal lesions. Chemical entities are empowering these tools to offer exact biochemical changes for treatment with specific drugs or drug-like molecules.

Dr AK Mishra obtained his PhD (Chemistry) in 1988 from BHU, Varanasi. He held positions as Post-doctorate fellow at Universite de Bourgogne, Dijon, France; Res Scientist at Univ of California, Davis, USA; Senior Scientist at INSERM U-463, Nantes, France, and Visiting Prof at Max-Planck Institute, Germany.

Dr Mishra has published more than 312 papers and has US, European and Indian patents. He is recipient of the most prestigious DRDO-Young scientist award by Prime Minister (Shri Atal Bihari Vajpayee) of India in 1999. His research interests include Molecular Imaging Probes (SPECT-PET-MR-OI), Radiochemistry, Coordination chemistry, Synthetic chemistry & Bioconjugate chemistry. He is Hon Prof, Deakin Univ Australia and a member of the Task force for DBT and DST. He is a Core Member of Radiopharmaceutical of India (DCGI) and Expert of IAEA, Vienna.



(Introduction to the Lecture series were done by Dean, Dr Roy Joseph/ Associate Dean, Dr Manikandan S; Introduction to the speaker was carried out by Dr Easwer HV, Head, Dept of Neuro-surgery, SCTIMST. Comments and QA session were moderated by Dean/ Associate Dean followed by Vote of thanks by Dr Mala R (AMCHSS), Dr Jayasree RS, Scientist G, BMT, SCTIMST)



Talk by Experts

Prof MM Godbole's talk, 13 April 2023

Title of talk: Spatio-temporal effects of iodine/thyroid hormone deficiency on neurodevelopment and the plausible ameliorative approaches beyond the critical window



Academic FEST of SCTIMST: Jan to Jun 2023

Date	Department	Speaker	Title of Presentation
07 Jan	Department of Biochemistry	Dr Madhusoodanan UK, Associate Professor	Overview of the department and its activities
		Dr Cibin TR, Associate Professor	
21 Jan	Computer Division	Dr Geetha G, Scientist G Senior grade	Major activities of computer division
	Medical Records department	Mr Christudas J, Medical Records Officer	Overview of medical records department
04 Feb	Department of Anaesthesiology	Dr Smita V, Additional Professor	An overview of ongoing projects and MOUs signed by the SCTIMST and the Govt Engineering college, Barton Hill
	Department of Neuro Surgery	Dr M Gowtham, Assistant Professor (Adhoc)	Brief introduction to the projects from the Dept collaborating with Barton Hill and discussion of 2 devices
	BMT wing	Dr Sabareeswaran A, Scientist G	Brief introduction to Heart matrix- Tool for isofixing, Isoslicing of large size sheep/Pig Heart
	Department of IS and IR	Dr C Kesavadas, Professor Senior grade	Brief introduction to the project by the department and its applications
04 Mar	Nursing Service Division	Nirmala MO, Nursing Superintendent SCTIMST	Introduction to Nursing Service Division
		Leena RK, Deputy Nursing Superintendent SCTIMST	Activities of Nursing Service Division
	Nursing Service Education	Sujaraj L, Lecturer in Nursing SCTIMST	Overview to Nursing Service Education
18 Mar	Department of Pathology	Dr Neethu Mohan, Scientist E	Overview of Div of Cellular & Molecular Cardiology, Basic and translational research in cardiovascular Biology
		Dr Divya MS, Scientist C	Modelling neurodevelopment and neurodegenerative disorders invitro to understand disease pathogenesis
01 Apr	Department of Cardiology	Dr Krishnamoorthy KM, Professor	Brief overview of the Dept and its activities, Non fluoroscopic closure of congenital defects
		Dr Abilash SP, Professor	Conduction System Pacing
		Dr Vishnu K, PDF	TAVR
29 Apr	Department of Applied Biology	Dr Anoopkumar TS, Scientist G	Overview of Division of Molecular medicine
		Dr Renjith P Nair, Scientist C	Overview of Division of Thrombosis Research
20 May	Department of Neurology	Dr Sapna Erat Sreedharan, Professor	Comprehensive Centre for Sleep disorders
		Dr Ramshekhar Menon, Professor	The Cognitive & Behavioural Neurology Section (CBNS) of the dept of Neurology
		Dr Sruthi Nair, Additional Professor	Neuromuscular and Multiple Sclerosis Divisions
03 Jun	Achutha Menon Centre for Health Sciences Studies	Dr K Srinivasan, Professor	Management science as vital dimension of public Health
		Dr Rakhal Gaitonde, Professor	Overview of academic initiatives, policy related work at state and National level
17 Jun	Cardiac Anesthesia	Dr Unnikrishnan KP, Professor	Perioperative echocardiography
		Dr Subin Sukesan, Additional Professor	Overview of thesis, publications and research updates



74th Republic Day Celebrations @ SCTIMST, 26 Jan 2023



Azadi Ka Amrit Mahotsav, an initiative of the Government of India, is celebrated to commemorate 75 years of independence and to rejoice glorious history of its people, culture and achievements. The official journey of Azadi Ka Amrit Mahotsav commenced on 12th March 2021 which started a 75-week countdown to our 75th anniversary of independence and will end on 15th August 2023.



National StartUp Day @ SCTIMST-TIMed, 16 Jan 2023

SCTIMST-TIMed organized an event to celebrate National Startup Day in India to rejoice the spirit of Indian startup ecosystem.

“**Biocalculus**’ ambulatory cardiac monitoring device developed by Waferchips Technosolutions, (a startup supported with DST Seed funds through TIMed) was donated to SCTIMST with HDFC bank CSR grant. The units were received by Dr KM Krishnamoorthy, Head, Dept of Cardiology and Dr Narayanan Namboothiri, Prof. of Cardiology, SCTIMST from the founders of Waferchips in the presence of Dr Sanjay Behari, Hon’ble Director, SCTIMST, Dr Fr Abraham Mulamootil, (Director, Waferchips & former Chairman, Pushpagiri Medical Institutions) and HDFC Bank officials.

A booklet titled “**IPR for Startups-A Ready Reckoner**” was released by Hon’ble Director



Kick start grant was released to the Social Innovation Fellows of TIMed under the BIRAC Sparsh project.



Website of TIPS@TIMed, which is one of the seven regional Technology Transfer Offices funded by NBM, BIRAC to provide IPR and Technology Transfer services to academia and research organizations in the country was launched.



Prime Minister Narendra Modi announced January 16 as the National Startup Day in order to promote entrepreneurship and promote businesses. It is also commemorated to provide a platform for startup entrepreneurs to discuss innovation for India’s youth and their contribution to the economy. The motive behind encouraging the idea of entrepreneurship is to give a boost to schemes like Make-in-India. At National level, The Department for Promotion of Industry and Internal Trade organized felicitation ceremony for the winners of the National Startup Awards.



Institute Day, 28 February 2023



Dignitaries joining Online for the Program



National Science Day, 28 February 2023



Chief Guest, Dr G Madhavan Nair,
Former Secretary, Dept of Space, Govt of India and Former Chairman of ISRO



International Women's Day, 8 March 2023



International Women's day was celebrated on 8th March, 2023 with great enthusiasm and fervor. The guests of honor at the function were Dr PK Jameela, Member, Kerala State Planning Board and Dr S Sujatha, Head, ESDD, ISRO. Dr Rupa Sreedhar, Medical Superintendent presided over the function and delivered the inaugural speech. The chief guests addressed the gathering and highlighted the significance of the celebration, the gender differentials that exist in the society and in particular the gender disparity in the field of science and technology. Dr Harikrishna Varma, Head, BMT Wing and Dr Kavita Raja, Professor (Senior Grade) and Chairperson ICC gave the Women's day messages. Senior most women of all the cadres, Dr Geetha G (Scientist G Senior grade, Smt Sreepriya CS, Senior Principal Secretary to Director, Smt Jayasree KK, Scientific officer Biochemistry and Smt Lathika T, Senior Unit Assistant were honored during the function.

The entries of the photography contest held for the women of the Institute, in connection with the IWD 2023 celebration were displayed. A quiz competition was conducted by Dr Jyothi EK, Microbiology. Dr RS Jayasree, Scientist G & Nodal Officer, GATI welcomed the guests and the gathering and Dr Manju R Nair, AMO & member, GSAT proposed the vote of thanks.



Gender diversity is not just good for women; it's good for anyone who wants results. Melinda Gates



World Sleep Day, 17 March 2023

Comprehensive Centre for Sleep Disorders (Dept of Neurology), Division of Sleep Research (BMT Wing) and Nursing Division of SCTIMST celebrated World Sleep day with a public interactive program at Auditorium-2 of the hospital. The program was presided by Dr Sanjay Behari, Director who spoke about the significance of sleep day in relation to the ancient wisdom and Astronomy-the auspicious day of spring equinox, that marks the auspicious beginning of spring across the country when the world shifts from the slumber of winter to the bright colors and vibrancy of spring. He highlighted on the recent advances in sleep research for better health.



Dance-skit performance by Cardiac & Neuronursing students | Poster competition: Theme "Sleep is essential for Health"



2023 Epilepsy Purple Day, 26 March 2023

R Madhavan Nayar Center for Comprehensive Epilepsy Care (RMNC), Department of Neurology, SCTIMST celebrated 2023 Epilepsy Purple Day with a public interactive programme at Auditorium 2 of the hospital. Introduction to Purple Day was given by Dr Manju Mohan P, Speech Therapist, Department of Neurology. Dr Ramshekhar N Menon, Professor and Incharge, RMNC, welcomed the gathering. Dr PN Sylaja, Professor and Head, Department of Neurology gave the presidential address. Dr Easwer HV, Professor and Head, Department of Neuro Surgery, Dr Bejoy Thomas, Professor and Head, Department of Imaging Sciences and Interventional Radiology, Dr George Vilanilam, Professor, Department of Neuro Surgery, Dr Ajith Cherian, Additional Professor, Department of Neurology and Dr Soumya Sundaram, Additional professor, Department of Neurology felicitated the programme. Dr Hari Krishnan R and Dr Kiran Koshy, Post doctoral Fellows in Epilepsy gave awareness talks on “De-mystifying Anti Seizure Medications” and “Alternative Options in the Management of Epilepsy” respectively. Gifts for children who had attended the programme were distributed on the ceremony. All the participants were given brochure regarding epilepsy care. The programme was attended by over 60 people who included patients, their caregivers, staffs and students of Sree Chitra. The caregiver education programme was followed by cultural programmes. The programme concluded with vote of thanks expressed by Mr Anees CA, Technical Assistant, Department of Neurology.



World Hand Hygiene Day 2023, 1-5 May 2023

The World Hand Hygiene week was observed by the Department of Microbiology and Hospital Infection Control Unit (HICU) from 1st May to 5th May to improve hand hygiene and thereby infection prevention and control at point of care.

Various activities were conducted aimed at increasing awareness of hand hygiene among the staffs and students in the hospital. Inspection of cleanliness was conducted on May 1st in all wards and ICUs by Dr Rajalekshmi P and Dr Amita R. Poster competition was conducted based on the theme for 2023 in three different languages. Webinar on reduction of surgical site infections was conducted on 4th May. A talk was given by Mrs Sinil C Nair, BSN, RN CIC. Infection control expert, Ministry of Health and Prevention on "Protocol development for reduction of Surgical site infections." and Dr Renjini R Kurup, DNP, CRNA Certified Registered Nurse Anaesthetist, Veterans Affairs Medical Centre on "Role of anaesthesia department in preventing surgical site infections."

Campaign theme: Together, we can accelerate action to prevent infections and antimicrobial resistance in health care and build a culture of safety and quality in which hand hygiene improvement is given high priority.

In the World Hand Hygiene Day Valedictory function, Dr Kavita Raja welcomed the gathering. The function was inaugurated by the honorable Director, Dr Sanjay Behari. He reiterated the importance of infection control and appreciated the efforts of the antimicrobial stewardship committee in bringing out the Antibiotic policy in a fairly short time. He released the newly published **Antibiotic Stewardship Policy of SCTIMST** by handing over one copy to Dr Krishnakumar, Professor of Neurosurgery. Felicitation address was delivered by Dr Krishnakumar K, AMS and Professor, Dept of Neurosurgery. Prizes for the winners of the competitions were distributed in the meeting. The nursing students performed a Hand hygiene awareness mime.

Webinar: Reduction of Surgical Site Infections
4/5/23 (THURSDAY)
7:00PM - 8:00PM



Dr. Renjini R. Kurup
DPN, CRNA
Certified Registered Nurse Anesthetist, Veterans Affairs Medical Centre, USA



Mrs. Sinil C. Nair
BSN, RN CIC
Infection control expert, Ministry of Health and Prevention, Clinical Quality and Healthcare accreditation Department, UAE





Annual Convocation (39th Batch) of SCTIMST, 6 May 2023

The convocation of the 39th batch of students who graduated from SCTIMST was held on May 6, 2023, at the Achutha Menon Centre of Health Sciences Auditorium. Dr Sanjay Behari, Director, SCTIMST delivered the welcome address and presented annual report of the institute. The heads of various departments presented their new graduands and the degrees were conferred to the graduands by Dr Vijay Kumar Saraswat, the Hon'ble President of the Institute.

The chief guest of the function, Dr Vinod Kumar Paul, Member, NITI Aayog, Govt of India, delivered the convocation address. The guest of honor of the function was Dr Rajesh S Gokhale, Secretary, Dept. of Biotechnology, Govt of India. Dr Gokhale gave an impressive convocation address. Afterward, the president, chief guest, and the guest of honor were felicitated by the director by giving them mementos.



127 Graduands received their degrees from the president under different specialties and programs.

DM	Cardiology/ Neurology/ Cardiothoracic and Vascular Anaesthesia/ Neuroanaesthesia/ Neuroimaging and Interventional Neuroradiology	27
MCh	Cardiovascular and Thoracic Surgery, Neurosurgery	7
MD	Transfusion Medicine	1
PDF	Adult Cardiology & Interventions/ Epilepsy/ Stroke/ Cardiac Electrophysiology/ Cerebrovascular Surgery/ Electroencephalography/ Neuromuscular Disorders/ Paediatric Cardiac Anaesthesia/ Paediatric Cardiology/ Skull Base Neurosurgery	12
MPH	Public Health	72
PhD	In fields of Bioengineering, Biomaterials, Biological Sciences, Health Sciences etc	7
MS	Bioengineering	1



Annual Convocation (39th Batch) of SCTIMST, 6 May 2023



Annual Convocation (39th Batch) of SCTIMST, 6 May 2023



Sixth G Parthasarathi Oration - 2023 by Dr Lalit Dandona

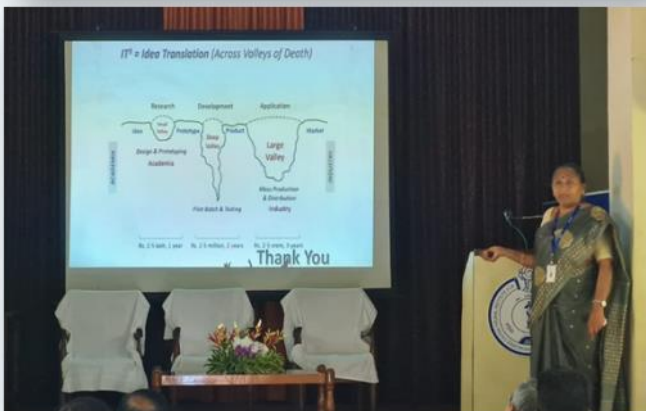
Sixth G Parthasarathi Oration was delivered by Dr Lalit Dandona (Distinguished Research Professor of the Public Health Foundation of India; Professor of Health Metrics Sciences, Institute for Health Metrics and Evaluation, University of Washington; and Honorary National Chair of Population Health, Indian Council of Medical Research). An introduction to Shri G Parthasarathi was given by Dr Roy Joseph, Dean of Academic Affairs. The orator was introduced to the audience by Dr PN Sylaja, Associate dean. Dr Lalit Dandona was felicitated by the Dean, Director, and the President.



National Technology Day, 11 May 2023

National Technology Day was observed on 11th May 2023 at Bio-Medical Technology (BMT) Wing, SCTIMST. The event was celebrated to mark the anniversary of the **Pokhran nuclear tests (1998)** and to acknowledge the achievements of technology giants, researchers, engineers & technologists of our country. Dr Savithri S, Chief Scientist, Materials Science & Technology, CSIR-NIIST, Trivandrum, was invited as the chief guest for the event.

Dr Harikrishna Varma PR, Head BMT Wing, welcomed the chief guest and introduced her to the audience. The chief guest gave an exceptional talk on **“Modelling and simulation for material processing”** with an example of indigenously developed technology. The speaker had impressed the audience by sharing various advancement of indigenous technology and strategies to overcome difficulties. The talk was followed by a dynamic interactive session. This talk was a perfect fit for national technology day theme “School to Startups- Igniting Young Minds to Innovate”. A memento was handed to the speaker as token of appreciation. Shri DS Nagesh, SIC, Division of Extracorporeal Devices, BMT wing formally thanked the audience.



The theme for 25th National Technology day was **“School to Startups- Igniting Young Minds to Innovate”**. The day marks India's successful nuclear tests, code-named Operation Shakti, in Pokhran in 1998, which were conducted under the leadership of former President Dr APJ Abdul Kalam. Former Prime Minister Atal Bihari Vajpayee first declared May 11 as National Technology Day in 1999 to honour Indian scientists, engineers, and technologists.



International Nurse's Day celebration, 12 May 2023



Nursing Division of SCTIMST celebrated International Nurses' Week along with all nurses worldwide organizing several sports & cultural events, scientific paper and case study presentations & quiz program. A community outreach program was conducted in Kottoor grama panchayat settlement area. A medical camp conducted with medical examination by doctors from cardiology and neurology department. All those attended medical camp was checked for diabetes, hypertension and anemia. Those needed further evaluation and management are referred to other health centres. Nurses conducted awareness classes to the group on stroke prevention and care, CPR demonstration with a manqué, anemia prevention and importance of menstrual hygiene for adolescent girls. Around 250 library books were donated to their library. Note Books and pen were given to 100 students and 100 bed sheets were given to the families.

The Nurses day program was inaugurated by Sri Jayakumar K, Rtd IAS officer from Kerala and renowned poet, script writer, translator and now the Director of IMG. The program as presided by Mrs Nirmala MO, Nursing Superin, SCTIMST. Deputy Director Dr Kesavadas, Dr Rupa Sreedhar Medical Supdt, Mrs Valsala kumary, Rtd Nursing Supdt and Mrs Sujaraj L, lecturer in nursing felicitated the event.

Community Outreach Program: Kottoor settlement area



Swachhata Pakhwada, 1-15 May 2023

Swachhata Pakhwada is a campaign launched under the Swachh Bharat Mission. It is an important flagship programme of the Government of India initiated by the Prime Minister, Shri. Narendra Modi, launched in order to honour Mahatma Gandhi's and fulfil the dream of Mahatma Gandhi to make a clean and hygienic India. It is a FORTNIGHTLY AWARENESS drive on cleanliness and is being observed every year. May 1st to 15th is the period of campaign for all institutions under Department. of Science and Technology As part of the campaign, various activities were conducted to promote the cleanliness culture as well as to spread awareness about sustainable cleanliness to the employee community of the institute. The activities conducted include **'Plantation of Tree Saplings', 'Setting up of medicinal plants garden', 'Clean campus drive', 'Swachhata at Workspace', 'Poster competition for kids',** Strategies for implementation of **"Green Protocol"** and organizing lectures on **'Strategies on laboratory waste management'** for BMT Wing.

The Swachhata Pakhwada campaign of BMT Wing was inaugurated by Prof Sanjay Behari, Director, SCTIMST on 03 May 2023. As part of the inaugural ceremony, saplings of fruit bearing trees such as guava, sapota, custard apple, njaval, peanut butter fruit, mango, cherry plants were planted in the premise of BMT pond valley. Apart from the fruit bearing trees, as many as 25 varieties of medicinal plants were planted Dr Harikrishna Varma PR (Head BMT Wing), HoDs of different departments, faculty members, and other staff near the reception, BMT wing. The green protocol comprises of a set of measures implemented to significantly reduce waste with primary focus on prevention of use of disposables and using reusable alternatives like glass/stainless/ porcelain cutleries.



Prize distribution function



Swachh Bharat Mission committee Members 2023:
 (From Left to right): Shri Sajithlal MK (Chairman), Dr Gijo Raj, Shri Saurabh S Nair, Mrs Beena P Nair, Dr Remya KR, Dr Shiny Velayudhan, Mr Hemanth Kumar RP and Shri Anoop Gopinathan (not shown in the photograph)



World Environment Day, 5 June 2023

Theme of WED 2023: #Beat Plastic Pollution



- Three key activities were carried out on WED 2023:
- **Inauguration of Green Protocol Implementation by Director**
 - **Unveiling of the Green Protocol Logo by Head BMT wing.** The logo gives the message that a healthy mother earth is essential for sustaining healthy life of mankind.
 - **Green Protocol demonstration by Green Protocol committee**



Service Recognition to Employees on completion of 10,20,30 yrs



The Certificates of Merit by SCTIMST for year 2023

Dr Jeemon P, Associate Professor, AMCHSS receives Prof MS Valiathan Certificate of Merit for the Outstanding Research Investigator 2023



Certificate of Merit 2023 for the Best Biomedical Technology Innovation - Er NN Subash, Engineer C, BMT Wing, SCTIMST



Certificate of Merit 2023 for outstanding achievement in the clinical specialty - Dr Narayanan Namboodiri, Professor, Department of Cardiology (Received by the HOD, Dr Harikrishnan)



Certificate of Merit 2023 for the best paper publication (Strontium ion cross-linked alginate-g-poly (PEGMA) xerogels for wound healing applications: in vitro studies)- Ms Rajalekshmi GP, PhD scholar



Certificate of Merit 2023 for outstanding achievement in basic science research - Dr Jayasree RS, Scientist G, BMT wing, SCTIMST



Certificate of Appreciation

Liquid Embolic Agent for Application as a Permanent Implant Occluding the Abnormal Blood Vessels of the Brain (Technical PI: Dr Roy Joseph; Clinical PI: Dr Jayadevan; Technology partner: M/S Biorad Medisys Pvt Ltd, Pune; Industry representative: Mr Anku Sreekumar).



Success is the sum of small efforts, repeated day-in and day-out.

During the convocation, the members of the SCTIMST faculty who have given outstanding contributions in various areas were awarded certificates of merit and plaques.

Certificates of Appreciation were presented to research teams who developed and transferred biomedical technologies to the industry. Certificates were also given to their technology partners.



The Certificates of Appreciation by SCTIMST for year 2023

Drug Eluting Bioactive Calcium Sulfate Cement (Technical PI: Dr Manoj Komath; Clinical PI: Dr Easwer HV; Technology partner: M/s Onyx Medicals Pvt Ltd, Meerut, UP)



Infant Warming Wrapper & Bassinet' (Technical PI: Mr Sarath S Nair; Technology partner: M/s Kerala State Electronics Development Corporation, (Keltron); Industry representative: Mr Ajaya Kumar CP, Manager & Head (Corporate Planning & Knowledge Services Group)



Automatic Smart Trash Bin for Disinfection Using UV Enabled Microwave (Astra)' (Technical PI: Dr Manoj GS; Clinical PI: Dr Manikandan; Technology partner: M/s Forsta Meditech Pvt Ltd., Lucknow, UP)



Flow Diverter Stent (Technical PI: Dr Sujesh Sreedharan; Clinical PI: Dr Santhosh Kannath; Technology partner: M/s Biorad Medisys Pvt Ltd, Pune; Industry representative: Mr Anku Sreekumar)



Chitra SARS CoV2 Multiplex RT PCR Kit (Technical PI: Dr Anoopkumar T, Scientist G; There were two technology partners for this product. Technology partner 1: M/s Huwel Life Sciences, Hyderabad; Industry representative 1: Mr Krubakaran, Director-Global Sales and Marketing; Technology partner 2: M/s Meril Life Sciences, Ahmedabad; Industry representative 2: Mr Raghesh V)



Atrial Septal Defect Closure Device (Occluder) (Technical PI: Dr Sujesh Sreedharan; Clinical PI: Dr Bijulal; Technology partner: M/s Biorad Medisys Pvt Ltd, Pune; Industry representative: Mr Anku Sreekumar)



Technology is best when it brings people together and serves the humanity



The Certificates of Appreciation by SCTIMST for year 2023

Shri CV Muraleedharan Scientist-G (Sr Gr); Technical Research Centre grant from the DST, Govt of India; The total project cost = Rs 93.25 Crores



Shri Balram, Scientist-G; Grant for Technology Business Incubator from different schemes of DST, BIRAC, and CSR grants of HDFC Bank; Total amount raised = Over INR 25 crores.



Dr Maya Nandkumar, Scientist-G; Grant from the Department of Biotechnology, Govt of India; Total cost of the project = INR 9.52 crores.



Dr Roy Joseph Scientist-G; Grant from the SEED Division, Dept DST, Govt of India; Total cost of the projects = INR 6.12 crores.



Dr S Harikrishnan, Professor; Grant from the Indian Council of Medical Research, Govt of India; Total cost of the projects = INR 5 crores



For National Petrochemical Award 2022, by the Ministry of Chemicals and Petrochemical, Govt of India. Dr Roy Joseph, Ms Gopika Gopan, and Dr Jayadevan were the winners of the award.



Prof Mohandas - Richard A Cash merit certificate for the best outgoing Master of Public Health student was presented to Dr Karthi Vijay



Fellowship of the Royal College of Physicians- FRCP (London)



Dr Sajith S, Professor, Department of Neurology has been elected for the prestigious **FRCP (London)** by the Royal College of Physicians. He is a senior Stroke Neurologist and is in-charge of the Neurointensive Care Division of the Department of Neurology.



Chitra's Stars: Honors and Recognitions

Sascan Meditech Private Limited incubated at SCTIMST TIMed (the Technology Business Incubator of SCTIMST) was awarded the prestigious **National Technology Day Award 2023** (under Technology Startup category) at New Delhi on 14th May 2023 by Dr Jitendra Singh (Hon'ble Minister of State for Science & Technology and Earth Sciences, Government of India) for the indigenous development of **Oralscan** - a handheld device to screen early-stage oral cancers and for biopsy guidance. The award is given by Technology Development Board, a statutory body of DST to a technology start-up for promising new technology with potential for commercialization and consists of cash prize of Rs 15 Lakhs and a trophy. Dr Subash Narayanan, founder of Sascan Meditech received the award from Dr Jitendra Singh at New Delhi.



Dr Jyothi Vijay MS, Assistant Professor (Adhoc) Department of Cardiology received **Life time certification in Heart Failure** on passing online competitive examination conducted by European Society of Cardiology, Heart Failure Association.



IFNR YOUNG INVESTIGATOR AWARD



Ms Rinta Paul, PhD Scholar in the Comprehensive Stroke Care program, Dept of Neurology has won the **IFNR Young Investigator Award** for the abstract titled "Feasibility and efficacy of virtual reality rehabilitation for the treatment of impairment of the upper

extremity due to Ischemic Stroke: A Pilot randomized controlled trial" during the 11th Annual Conference of Indian Federation of Neuro-rehabilitation, IFNRCON, Mumbai, 14-16 Apr 2023

Best Oral Presentation Award



Dr Shiny Velayudhan, Scientist E, Division of Dental Products, Dept of Biomaterial Science and Technology, BMT wing, SCTIMST, won the **Best Oral Presentation Award** (Scientist Category) at 35th Kerala Science Congress held at Mar Baselio Christian College of Engineering and Technology, Kuttikkanam,

Idukki during 12-14 February 2023, for the paper entitled "Design and Development of Transdermal Drug Delivery Device for Painless Administration of Insulin"



Chitra's Stars: Honors and Recognitions

Shri Om Prakash Sharma Young Scientist Award

Dr Naresh Kasoju (Scientist-C, Division of Tissue Culture, Department of Applied Biology, Biomedical Technology Wing) has received **Shri Om Prakash Sharma Young Scientist Award** for his outstanding contributions in the field of biomedical sciences at the 11th Annual International Conference of the Indian Academy of Biomedical Sciences (IABSCON 2023) held at NIMHANS, Bengaluru during 3rd–5th March 2023.



IAAM Scientist Award 2022

Dr Naresh Kasoju, also has been awarded the **IAAM Scientist Award 2022** in recognition of his contribution to the field of advanced materials for tissue engineering and regenerative medicine. Through this award, International Association of Advanced Materials, Sweden recognizes the distinctive contributions made by the researchers and motivates them to continue on the path of producing ground-breaking research for advancing materials to global excellence.

Fellow of the National Academy of Agricultural Sciences

Prof TV Anilkumar, Scientist-G in the Division of Experimental Pathology has been elected as a Fellow of the National Academy of Agricultural Sciences (NAAS, <http://naas.org.in>), which is one of the Govt-funded national academies of sciences), effective from Jan, 2023 (<http://naas.org.in/page.php?pageid=50>). He is also a Fellow of the Royal College of Pathologists (London) and the National Academy of Veterinary Sciences.



The Fellowship of the NAAS is considered as a highly prestigious honour among academicians and researchers in the broad subject of agricultural sciences that includes veterinary/animal sciences. At present there are only five fellows from Kerala representing agriculture/fisheries/forestry in the academy and he is the first veterinary doctor in the group. The fellowship is based on his expertise in Laboratory Animal Science, Toxicologic Pathology and the research on biomedical uses of gall bladder of farm animals. Otherwise a slaughter house waste without any monetary value, his research made gall bladder of pig into a highly value added raw material for production of biopharmaceutical products.



Dr Anugya Bhatt, Scientist G, receiving the **'Special Mention'** award for In-house Hindi magazine **Chitrallekha**



Dr Amita R, Associate Prof and Dr Jyothi EK, Scientist C receiving **1st Prize** for Quiz competition of TOLIC Rajbhasha Parv 2022-23.



Ms Kaveri BS, Upper Division clerk-A has received **Consolation Prize** for the competition 'What the Picture says'? Of TOLIC Rajbhasha Parv 2022-23.



Chitra's Stars: Honors and Recognitions



Dr Jineesh V, Associate professor, Dept of Imaging Sciences and Interventional radiology has been awarded for the **Best paper in Vascular Interventional Radiology** and **Overall best Oral Presenter Award** for the paper "Imaging and clinical factors predicting difficult IVC filter retrieval" at the

Indian Society of Vascular and Interventional radiology National conference held in Hyderabad, on February 9-12, 2023.

Dr Gayatri G, senior resident, from the Dept of Cardiothoracic and Vascular Anaesthesia has won the **first prize in oral paper competitive session** in the 17th Annual perioperative & critical care transesophageal echocardiography workshop held at PGIMER, Chandigarh on the 24th - 26th of February, 2023.



Ms Reshma S, PhD Scholar, Toxicology Division, BMT Wing, SCTIMST, has won the **Best Paper presentation award**, for her paper "Design and Development of Microfluidic device for wound healing and substrate coating studies" (Reshma S, Amir S, Ajaikrishnan MJ, Megha

KB, Joseph X and Mohanan PV), at the 30th Swadeshi Science Congress, organized by National Institute of Technology (NIT), Calicut during 25-27 May 2023.

Dr Divya Jacob P, senior resident, from the department of cardiothoracic and vascular anaesthesia has won the **third prize in oral paper competitive session** in the 17th Annual perioperative & critical care transesophageal echocardiography workshop held at PGIMER, Chandigarh on the 24th-26th of February, 2023.



Dr Shivanand H Kumatagi won **First Prize for Free paper presentation** at Diamond Jubilee Alumni Auditorium, Medical College, Trivandrum to in CME Organized by **Kerala State AIDS Control Society**.



Dr Viswanadh KSVG, final year resident in DM Neuroimaging and interventional neuroradiology from the Dept of Imaging sciences and interventional radiology has been awarded the **first prize in oral presentations** for the paper "Advanced MR imaging correlates of

Histopathological changes in Amygdala and the Temporal neocortex in Mesial Temporal Sclerosis" at the Indian society of Neuroradiology conference held at New Delhi between February 24-26, 2023.

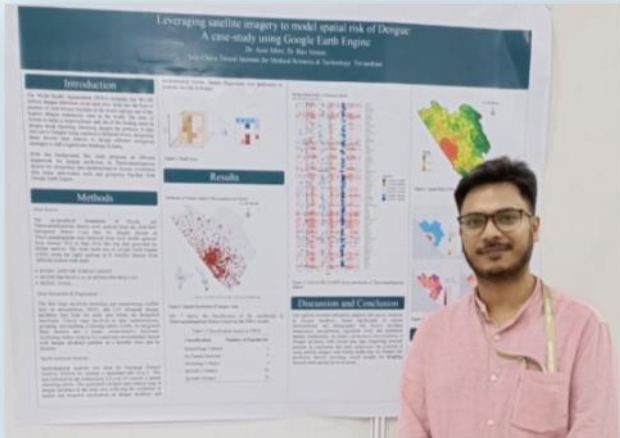
Alex Jose D, Department of IS & IR, SCTIMST, is selected for **Best Radiographer Award** at Society of Indian Radiographer (S I R) - Kerala chapter CME on 26 Feb 2023 conducted at IQRAA International Hospital and Research Centre at Calicut, Kerala.



"Work hard in silence, let your success be your noise"



Chitra's Stars: Honors, Recognitions and Quiz Masters



Dr Arun Mitra (PhD Scholar with Prof Biju Soman) has won the best poster award (Student Category) for his paper titled "Leveraging satellite imagery to model spatial risk of dengue: A case study using Google Earth Engine" presented at the SANGAM 2023 - Summit of Academia Networking with Government, Allied health workers And Medical professionals, which took place on June 2-3, 2023, at IIT Bombay in-collaboration with Govt of Maharashtra, and Maharashtra University of Health Sciences (MUHS).

This work adds to the previous research done by Dr Joanna Valson during her MPH on mapping dengue incidence in the Thiruvananthapuram district using satellite imagery and remote sensing. This work is part of the NAV-i-GEE Research Scholarship Program by Google and the Indian Institute of Technology (IIT), Tirupati, where Dr Arun Mitra has been selected as the NAV-i-GEE Fellow for 2023.



Dr Viswanadh KSVG, Final year Resident in DM Neuroimaging and Interventional Neuroradiology from Department of Imaging Sciences and Interventional Radiology won **second prize** in Neurointerventional Radiology Quiz conducted on 11th February, 2023 at Hyderabad.



First Prize for PG Quiz Competition at Diamond Jubilee Alumni Auditorium, Medical College, Trivandrum to **Dr Shivanand H Kumalagi and Dr Punkesh** in CME Organized by **Kerala State AIDS Control Society**.



Ms Resmi AN, PhD scholar under the supervision of Dr RS Jayasree, Division of Biophotonics and Imaging, Dept of Biomaterial Science and Technology, BMT,SCTIMST, won the **Best Poster**

Presentation Award under Life Sciences category at the 35th Kerala Science Congress held at Mar Baselios Christian College of Engineering and Technology, Kuttikkanam, Idukki during 12th -14th February, 2023, for the paper entitled, "Bifunctional Gold Nanocluster as a Theranostic Probe for the management of Alzheimer's disease".



Ms Gayathri J and Mr Ashish Mohan VP , final year students in Diploma in Advanced Medical Imaging Technology (DAMIT), secured **first prize in the quiz competition** in SIR state level CME 2023, conducted by GE healthcare at IQRAA International hospital and Research Centre, Calicut.

"Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family"
Kofi Annan



Chitra's Stars: Honors and Recognitions



Ms Ganga Anand G, PhD scholar working under the supervision of Dr Manoj Komath, BMT Wing, has won the Best Oral Presentation Award in the International Conference on Molecular Medicine and Therapeutics (ICMT-2023) held during 7-9 January 2023, at the Department of Biochemistry and

Biotechnology, Annamalai University, for the paper entitled "Isolation and Characterization of rat bone marrow mesenchymal stem cell derived exosomes and its role in bone regeneration". This work has been done in collaboration with the Dept of Biochemistry, SCTIMST.



Dr Venkata Subbaih A and **Dr Jayakrishnan R**, Second year Residents in DM Cardiovascular Imaging and Vascular Interventional Radiology from the Department of Imaging Sciences and Interventional Radiology won **third prize in the National level Grand Finale ISVIR Quiz**, 2023 held on 11th February, 2023 at Hyderabad.



Mr Sarathkumar E, PhD Scholar working in the Division of Biophotonics and Imaging, Department of Biomaterial Science and Technology, Biomedical Technology Wing, Sree Chitra Tirunal Institute for Medical Sciences and Technology under the supervision of Dr RS Jayasree has won **the Best**

Oral Presentation Award at the 35th Kerala Science Congress held at Mar Baselio Christian College of Engineering and Technology, Kuttikkanam, Idukki during 12th -14th February, 2023, for the research work entitled, "Nanozyme based signal amplified lateral flow assay for rapid and sensitive detection of Covid-19".

Dr Nandana J, Senior Resident in Neurology has won **first prize in poster presentation** for the paper titled "QT interval changes in acute ischemic stroke and its correlation with stroke severity and subtype" in the INSC 2023, the 16th annual Indian national stroke conference held at Chennai on 30/03/2023-02/04/2023.



Dr Avinash Kulkarni, Senior Resident in Neurology has won **Third prize in paper presentation** for the paper titled "Sleep Dysfunction after ischemic stroke - prevalence, predictors & short term outcome" in the INSC 2023, the 16th annual Indian national stroke

conference held at Chennai from 30/03/2023-02/04/2023.

QUIZ 1

What is meant by "morning larks" and "night owls" ?



Please submit your reply with Name, Department to the email: enewsletter@sctimst.ac.in before 15th August 2023.

First three entries will be featured in the next issue of the Chitra Dhwani.



Back to Basics 2023 (10th Edition), 20-23 January 2023

The Department of Cardiology, SCTIMST conducted the 10th anniversary edition of the annual "Back to the Basics" simulator based training course on the fundamentals of cardiac interventions on 20-22 January, 2023. The key areas covered included various aspects of diagnostic and interventional procedures in patients with coronary artery disease, valvular heart diseases and related imaging. **The special feature of this program was the use of simulators to provide hands-on experience for the trainees.** These simulators provide real case scenarios of clinical presentations as well as the related complications and help the trainees to learn how to manage them. The key attractions this year were simulator sessions on percutaneous (nonsurgical) aortic valve replacement, Laser angioplasty, CT imaging and Wetlab sessions cardiac anatomy, wet model on Rotablation and advanced intracoronary imaging and physiology assessment and demonstration of Cardiac support devices like IABP and ECMO. 200 early career and in-training cardiologists participated from across India and from neighboring countries. The faculty was drawn among the alumni of the department of cardiology of SCTIMST from across the country who are experts in the various subspecialties of cardiology. A Course book and a CD containing all the deliberations during the conference were distributed to all the participants.



SCTIMST-TMAS Workshop 2023: Immunohematology Tech

The Department of Transfusion Medicine, SCTIMST, Trivandrum, Kerala in association with Transfusion Medicine Academic Society, Kerala (TMAS) organized a workshop with hands on training on Immunohematological techniques on 16-17 Feb, 2023. Blood Centre Medical Officers, Junior Residents and Blood Centre Technical staff and students from within and outside Kerala, participated in the two-days workshop.



Bio Connect Kerala 2023

Bio Connect Kerala 2023 was the two-day International conclave and expo organized by the Government of Kerala from 25th to May 26th at the Leela Kovalam. It was a platform to bring together experts from various fields to discuss the latest developments in Biotechnology, Pharma Research, Manufacturing, Medical Devices, Nutraceuticals, etc. The two-day event discussed the latest trends and innovations in the life sciences industry and emerging startup opportunities in the sector. The conclave also provided networking opportunities for participants. Mr P Rajeev, Honourable Minister of Industries, Kerala, inaugurated the function, and various distinguished personalities such as Padmabhushan, and Prof T Ramasami, Former secretary of DST, Prof TP Singh, AIIMS, New Delhi and Dr Satish Chandran, CEO, ProdigY Bitech attended the function.



Conference on Critical Care Nursing-Pediatric Cardiac Nursing updates

Conference Organized by Nursing Service Division & Dept of CVTS conducted on 11/03/2023 at AMCHSS auditorium from 8 am to 5 pm. The Objectives of the program were to make the group understand the basic nursing care needs of children with congenital heart diseases undergoing surgical management, the special nursing skills in caring children, basic knowledge regarding the use of monitoring lines, analgesia and cardiac stability drugs and to equip the nurses for managing emergencies.

Delegates from all over Kerala attended the program with total participants of 263 of which 121 nurses from other hospitals. Program inaugurated by Prof Dr Rupa Sreedhar (MS) by lighting the lamp. Mrs Leena RK, DNS welcomed the gathering, Mrs Nirmala MO, NS delivered the presidential address & Prof Dr Baiju S Dharan, HoD CVTS felicitated and Kumari TR Bindhu expressed vote of thanks.

Experts from Department of CVTS, Pediatrics Anaesthesiology & Nursing Service Division presented papers on various aspects of basic monitoring & care of the babies with Congenital Heart surgeries. Active participation from the delegates was there. HoD Dr Baiju S Dharan and resource persons addressed the queries of the delegates. Certificates were distributed to the resource persons, delegates and organizing team members at the end of the programme. Programme received an encouraging feedback.



Hands on Workshop on Flow Cytometry, 15-17 March 2023

The Division of Thrombosis Research, SCTIMST, Trivandrum organized a three-day workshop on "Hands on Workshop on Flow Cytometry" from 15-17th March 2023. The workshop was inaugurated by Director, SCTIMST, Dr Sanjay Behari. The Dean SCTIMST, Dr Roy Joseph and Dr Maya Nandkumar A (Division of Microbial Technology) felicitated the programme. H Krishnamoorthy, Head, of Flow Cytometry and Confocal Microscopy Facilities at the National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India was the preceptor. The workshop sessions had theoretical and practical sessions that covered areas of basic of Flow Cytometry, Cell Cycle, Plant Ploidy Analysis, Genome Estimation and Apoptosis. The function was concluded with written test, and discussions. The valedictory function was presided over by Dr Hari Krishna Varma PR Head BMT wing.



KMTC, KSHEC & SCTIMST conducts Hands-On Workshop

KMTC, KSHEC & SCTIMST conducted HANDS-ON Workshop for researchers to further translational research outcomes in Medical Devices on 21 March 2023.

Kerala Medical Technology Consortium (KMTC), partnered with the Kerala State Higher Education Council (KSHEC) and the SCTIMST, organized a one-day Hands-On Workshop for researchers in the state, where experts and stakeholders came together to help impart practical knowledge around Translational/ Applied Research in Medical Sciences & Technology. Participated more than 100 senior researchers, students and faculty, from across the state from various institutes, universities, involved in the area of Translational or Applied Research in the complex domain of Medical Sciences and Medical Technology. An expert in the area from Germany, Dr Harald Peter, Head of IvD-Platform / Point-of-Care Technologies, Fraunhofer Institute for Cell Therapy and Immunology, Porsdam, Germany actively participated in the program. The Fraunhofer Society-led Fraunhofer group of institutions are best known for their cutting-edge applied research and close partnerships with industry, developing many technologies like Lab-on-a-Chip diagnostic devices and mp3 digital files system for music. During his sessions and during his interactions with the participants, Dr Peter, drawing from his years of experience firsthand with Fraunhofer's industry-facing applied research model, emphasized on the role of both industry and researchers in developing innovations that are useful to society, and the need for closer collaboration between them. Dr R Bindu, Hon'ble Minister for Higher Education and Social Justice, and Chairperson, Kerala State Higher Education Council, Government of Kerala inaugurated the workshop. Dr Rajan Gurukkal, Vice Chairman, KSHEC, Dr Saji Gopinath, Vice Chancellor, Digital University of Kerala, Prof Samir Kumar Brahmachari, renowned Biophysicist and former Director General of Council of Scientific and Industrial Research (CSIR), Director, SCTIMST and Mr C Padmakumar, Special Officer, KMTC were also part of the Workshop and delivered their insights and inspired the participants to go above and beyond just academic research.



Medical Device technology is truly interdisciplinary
Chris Toumazou



Comprehensive Nursing Management of Stroke, 10 June 23

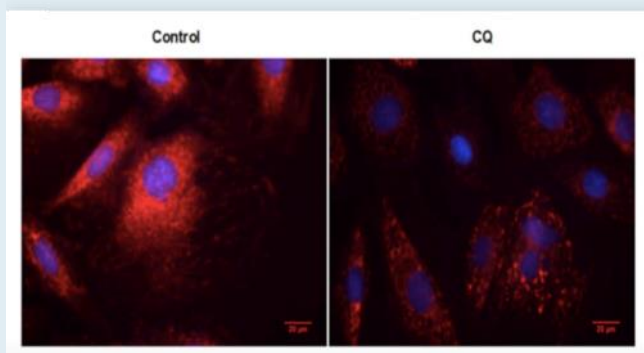
An one day conference on "Comprehensive Nursing Management of Stroke" conducted on June 10th 2023 at AMCHSS auditorium was organized by Nursing Service Division and Comprehensive Stroke Care Program SCTIMST in association with Non Communicable Diseases Division, Directorate of Health Services, Govt of Kerala. The program was inaugurated by Dr Rupa Sreedhar, Medical Superintendent. Dr PN Sylaja, Professor and Head of the Department of Neurology, Dr Bipin K Gopal, Deputy Director, Directorate of Health Services, Govt Of Kerala and Dr Easwer HV Professor and Head of the Department of Neuro Surgery felicitated the program. Mrs Nirmala MO, Nursing Superintendent welcomed the gathering and Mrs Leena RK Deputy Nursing Superintendent delivered vote of thanks. A total of 260 delegates from our hospital and from other hospitals throughout Kerala attended the conference. The faculty from Stroke unit, Neurosurgery, IS & IR and Vascular Surgery, Nursing officers from Stroke ICU, Speech therapist and physiotherapist were the resource persons.



Modified Abstracts: Work done in SCTIMST

Impairment of Substrate-mediated Mitochondrial Respiration in Cardiac cells by Chloroquine

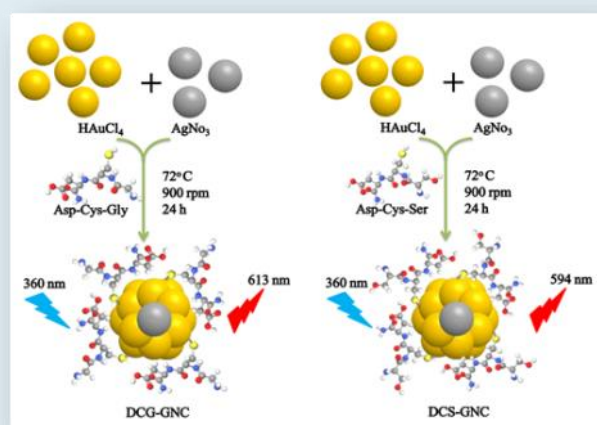
Chloroquine is well known as an anti-malarial agent and also being used for the treatment of other infections and autoimmune diseases. Recently, chloroquine and its derivatives are also been tested as adjuncts alongside conventional anti-cancer treatments in combinatorial therapies based on its inhibitory action of autophagy, a crucial biological process important in physiology and disease biology. Numerous reports previously have shown cardiac complications by the use of chloroquine and its derivatives and raise concern over their indiscriminate use. During the beginning of covid-19 pandemic, it was widely prescribed for prevention and treatment of SARS-CoV-2 infection, without proper clinical trials. Even though its effect on cardiac mitochondria is extensively studied in disease models, their impact on cardiac mitochondrial respiration under physiological conditions remained inconclusive. In this work published in *Molecular and Cellular Biochemistry* authored by S Ashok, Sasikala R Raji, S Manjunatha and G Srinivas, the team evaluated the impact of chloroquine on cardiac mitochondria using both *in-vitro* and *in-vivo* model systems. By using high-resolution respirometry in cells and isolated cardiac mitochondria from mice, chloroquine was found to impair substrate-mediated mitochondrial respiration in heart. In summary, chloroquine causes the deterioration of a healthy mitochondrial population. Our study suggests that chloroquine causes mitochondrial toxicity in healthy cardiac cells and this would be an added burden in conditions with metabolic abnormalities like cancer chemotherapeutics-induced heart ailments, rheumatic heart disease, COVID-19, etc. This warrants the need for more in-depth and detailed studies in *in-vivo* systems to unravel the cardiotoxicity of chloroquine and its derivatives cautioning against the indiscriminate use of this drug.



Representative fluorescence micrographs of H9c2 cells stained with tetramethylrhodamine ethyl ester (TMRE) showing decline in the fluorescence intensity following Chloroquine treatment

Atomically precise gold quantum clusters for imaging and photodynamic therapy

Based on the nano concept, nanomedicine has gained much attention by developing better diagnostic devices and newer ways of treatment. The noble metal nanoparticles like gold, silver, platinum have unique photothermal and optical properties. The ability to integrate the noble metal nanoparticles into biological system with nontoxicity retaining its original optical and thermal properties is a major challenge. In a work entitled '**Engineering of Tripeptide Stabilized Gold Nanocluster with Inherent Photosensitizing Property for Bioimaging and Photodynamic Therapy**' authored by Hema S, Resmi VN, Divya MG, Ganga P and Jayasree RS published in *ACS Sustainable Chemistry and Engineering*, we have made silver doped gold clusters and shown its potential to use as photosensitizer for photodynamic therapy. For this, custom made tripeptides of Asp-Cys-Gly and Asp-Cys-Ser were synthesised and used to prepare atomically precise few atom gold cluster. By making its size smaller than few nanometres, it attains quantum size effect and shows inherent fluorescence which is used for imaging purpose. At the same time, the metallic content is negligible with a single cluster comprising of only few atoms, thus reducing metal induced toxicity to a large extent. Moreover, the fluorescence life time of this nanostructure is high contributing to the photosensitizing property useful for the generation of reactive oxygen species including singlet oxygen, which is the principle of photodynamic therapy. The electronic band gap and the transitions have been supported by computational analysis in collaboration with scientists from Bangalore University. Thus, two different gold clusters doped with silver atom were synthesized and demonstrated for its excellent anti-cancer activity with photoinduced generation of increased intracellular ROS, followed by stimulation of mitochondrial apoptotic pathway in breast cancer cells.



Pictorial representation of two tripeptide-gold nanoclusters



SCTIMST signs MOU with GEC Barton Hill, GESCO, KLE & KU

SCTIMST signs a MoU with **Government Engineering College Barton Hill and GESCO Healthcare Pvt Ltd, Chennai** for the prototype development of "Self-retaining Speculum for Endonasal Surgeries" on 24th January 2023. The MoU was signed between Dr Sanjay Behari (Director, SCTIMST), Prof Bijulal D (Principal, GECBH) and Mr Samuel WG (Director, GESCO). It was attended by Prof Easwer HV (HoD, Neurosurgery), Dr Rupa Sreedhar (Medical Superintendent), Dr HK Varma (Head, BMT Wing), Dr Prakash Nair (Additional Professor, SCTIMST), Dr Roy Joseph (Dean, SCTIMST), Prof Dinesh Gopinath (Dean, GECBH), Dr Anish K John (Asst Professor, GECBH), Dr M Gowtham (Asst Professor - Adhoc), Dr Arun Anirudhan V (Engineer E, SCTIMST) and students from GECBH.



SCTIMST signs a research related MoU with **KLE Institute of Higher Education and Research, Belgavi** on 13.04.2023, focusing particularly in areas of public health, dental research and medical simulation. Prof (Dr) Nitin M Gangane, Vice-Chancellor, Prof (Dr) VA Kothiwale, Registrar, Prof Dr Madan M Godbole, Distinguished Professor & Research Advisor, Prof Dr Abhijit S Gogate, Director-Clinical Skill Lab and Prof Dr Pramod HJ, Special Officer & Asst Registrar from KLE, and senior Faculty from SCTIMST represented the function.



SCTIMST signs MoU with **Department of Geology, University of Kerala (KU)** aiming to promote research collaboration between the Department of Neurosurgery, SCTIMST in the field of Moyamoya disease epidemiology, particularly exploring the geo-spatial distribution, geographical and environmental causative agents of the disease. The MoU was signed by Prof Sanjay Behari, honorable Director, SCTIMST and Dr KS Anil Kumar, Registrar, KU in the presence of the honorable Vice Chancellor of KU and IB Member, SCTIMST, Dr Prof Mohanan Kunnummal. The event was attended by Dr E Shaji, Head, Dept of Geology and Dr RB Binoj Kumar, Director, Research (KU), and Dean and senior Faculty from SCTIMST.



Retirement noble endeavors

Smrithi Vanam: Sapling planting 2023

The sapling plantation ceremony for the year 2023 was held on 30th January 2023 at BMT Wing. Employees retiring during different months of the year 2023 were invited to the function. The occasion was graced by the Director and Head, BMT Wing. The fellow workers of the department to which the retiree belongs also participated in the function along with the SCTIMST Chitra members.



Employee Name	Planted tree
Savithri K K	Star fruit
Seleena Joseph	Chamba
Madhusoodanan Nair P T	Neem
Geetha N	Rambutan
Ganesh P	Rose sandal wood
Mercy George	Kumpil
Joy Vithayathil	Cluster fig
Lathika T	Mooti
Lekshmanan M	Cannonball tree
Pradeep Kumar B	Pummelo
Suresh Babu S (Dr)	Dwarf white orchid tree
Geethakumari T	God's crown



Thanner Panthal: Setting up drinking water stalls

In order to face the scorching summer heat, the Kerala government's Department of Cooperation has instructed the cooperative societies to set up drinking water stalls under THANNER PANTHAL program. As part of this, the SCTIMST Employees' Co-operative Society has set up drinking water kiosks in patient waiting areas for cardiology and neurology outpatient areas. Hon Director Prof Sanjay Behari inaugurated the Kiosks at the Cardiology OP area on March 21, 2023. Society President Smt Abija VS presided over the function.



A drop of water is worth more than a sack of gold to a thirsty man.



Staff Benevolent Fund, SCTIMST: Retirement Function



A walk in nature walks the soul back home



How AMCHSS shaped my career!

I chose to do a Master in Public Health during the third year of MBBS at Christian Medical College, Ludhiana. While researching institutions which offered this course, Achutha Menon Centre for Health Science Studies (AMCHSS) was high on the list due to its reputation and international profile. I joined AMCHSS on 1st Jan, 2001 after completing my internship at CMC. I was one of 8 students – Dr Manju Nair, Dr Jeemon George, Dr Ajay VS, Dr Rani, Dr Sandeep, Dr Pradeep and Dr Paul Kumaran in that batch.

Studying at the AMCHSS has profoundly shaped my career in public health. The comprehensive curriculum provided a strong foundation in key areas like epidemiology and biostatistics, equipping me with the essential skills to tackle complex health challenges. Having a research project as part of the course was very beneficial as it taught me to use the theory that I learnt in class and put it into practice. The diverse and accomplished faculty fostered a stimulating learning environment, encouraging critical thinking and research excellence. Through rigorous coursework, practical fieldwork, and exposure to real-world scenarios, AMCHSS instilled in me a deep understanding of the social determinants of health and the importance of evidence-based interventions. It led me to meet researchers from across the world.

One of the key strengths of AMCHSS was the diversity of the faculty, who brought a wealth of experience and expertise to the classroom. They came from a variety of academic and professional backgrounds, including medicine, public health, and social sciences. This diversity enriched the learning experience and provided a broader perspective on the complex issues facing public health today. The faculty encouraged us to question assumptions, challenge established ideas, and develop our own research agendas. I developed an understanding of the social determinants of health and the importance of addressing health disparities. It also helped me gain an appreciation for community engagement in public health.

The course provided me with valuable networking opportunities. In fact, one of the networking opportunities led me to meet my first employer and PhD supervisor. Thanks to the comprehensive education I received at AMCHSS, I have been able to make meaningful contributions to public health. Since graduating from AMCHSS, I completed a PhD in Medicine from the University of Sydney and a Master's in Business Administration from University of New South Wales.

I have had the privilege to work on clinical trials, health systems research, community-based studies and implementation research across several

Dr Rohina Joshi



countries and the satisfaction of seeing my work impacting policy and practice. Along with collaborators across the world, I've published >150 peer reviewed articles and presented at several national and international conferences. My current work at the School of Population Health, University of New South Wales includes health systems research and teaching Global Health to students embarking on the MPH/MGH journey.

I am grateful for the knowledge, skills, and experience that I gained at AMCHSS, which have allowed me to make a positive impact on the health and well-being of communities around the world.

The 2020 Research Action Award Winner

Scientia Associate Professor Rohina Joshi, School of Population Health, University of New South Wales and Head of the Global Health Workforce, The George Institute for Global Health – Improving the quality of death certification of home deaths in the Philippines



<https://www.saxinstitute.org.au/news/sax-institute-honours-research-with-real-world-impact/>

(Dr Rohina Joshi MBBS, MPH, PhD is working as Scientia Associate Professor, Global Health; School of Population Health, Faculty of Medicine Samuels Building; UNSW SYDNEY NSW 2052 AUSTRALIA; Senior Research Fellow, The George Institute for Global Health, New Delhi, India; Honorary Senior Research Fellow, The George Institute for Global Health, Sydney, Australia)



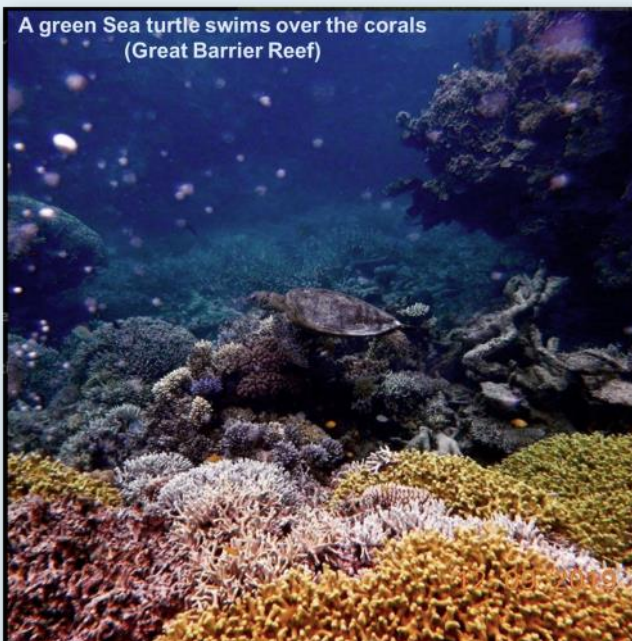
Adventure Section

"Sea, Ahoy!"

"The sea, once it casts its spell, holds one in its net of wonder forever", said Jacques- Yves Cousteau, a naval officer, and the co-inventor of the first successful open-circuit Self-Contained Underwater Breathing Apparatus or simply, the SCUBA. Since then, SCUBA diving as an adventure sport has come a long way.

Imagine. Like Alice, falling down a portal beneath the shimmering surface of water, and as the world above disappears, you find the weights of the world melt away from your mind and body - gravity seems to vanish - and you find yourself gliding along with the inhabitants of this new world, leaving you with a sense of exhilaration and wonder. It would be a dream come true for anyone with curiosity and a sense of adventure in their minds.

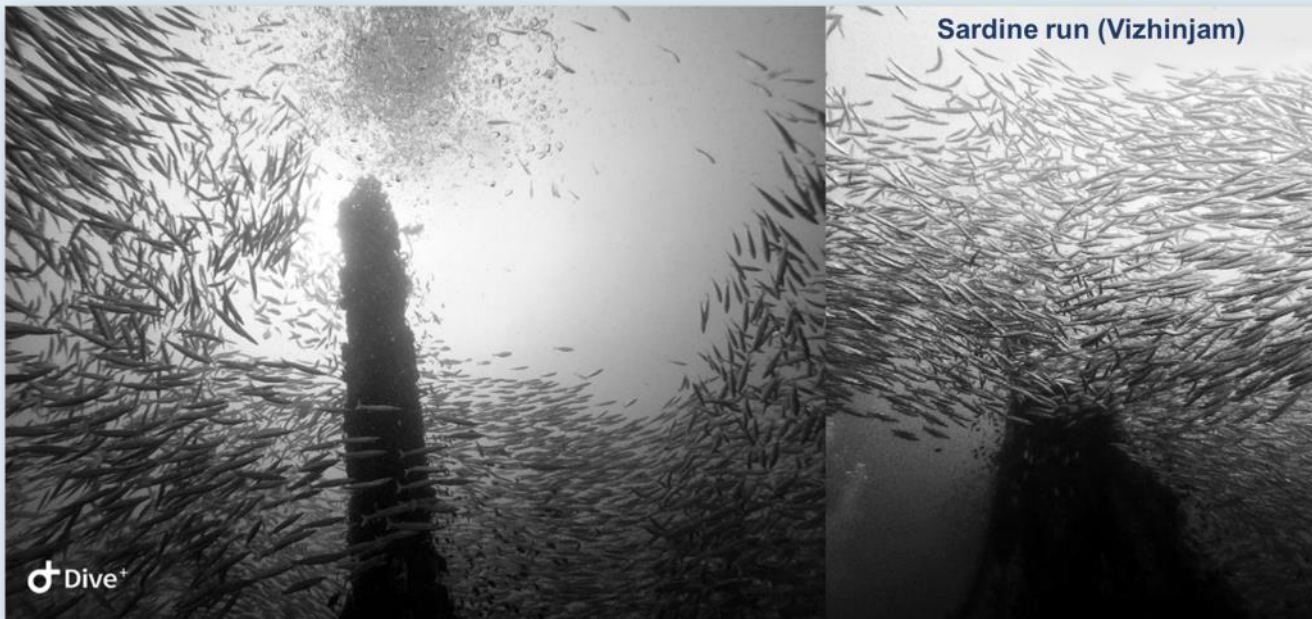
SCUBA diving is an underwater exploration that relies on specialized equipment and training that enable divers to breathe underwater. Currently there are a few organizations like PADI and SSI that provide diver education and certification to make interested and eligible individuals SCUBA -ready. And once certified, one can dive anywhere in the world depending on their skill sets.



Healthy oceans are the pillars of the sustainable development of our planet. Diving is a great fun way of learning first-hand about the biodiversity of the world as over 80% of the life on the planet still call the ocean their home. And it can also teach us about what a marine ecosystem is going through- be it the kaleidoscopic wonder of the Great Barrier Reef and the pristine corals of south-east Asia, or some of the man-made junk filled dive sites along the Indian mainland. While one dive like the former can fill you with so much joy and excitement, a dive like the latter can be quite an eye-opener for us who have only read in books about how our garbage ends up in our oceans. Observing the bleached corals of the Pacific or the beautiful butterfly fishes munching on the rubber and plastic wastes in the Indian Ocean can paint a picture of gloom in your mind that stays with you even long after you had bid adieu to the bubbles. I strongly believe that experiences like these will inspire us to lead more sustainable lifestyles.



"Sea, Ahoy!"



Sardine run (Vizhinjam)

The sea never stays the same, and needless to say, every dive is a unique experience on its own. One has to always be mindful of the fact that a diver is a guest visiting uninvited. Sea is full of mysteries and there's so much of it that we do not know about. Being a diver is a privilege and one should always be respectful enough not to touch or disturb these graceful creatures going about their business. A piece of beautiful coral might look like a meaningful piece of souvenir to home to, but remember, many of the corals take a year on an average to grow just an inch, and yet they are the tropical forests of the ocean sustaining the reef ecosystems that provide

the society with resources and services worth \$375 billion a year- yes, often we take more than we give.

Few experiences in life can provide you the profound connection with nature that you experience when you dive. Since that very first dive which captivated me and thrust me into this amazing world of SCUBA, I have been fortunate enough to have had some of the most impressive and educative experiences of my life, underwater. Years later, still every dive comes with that same sense of anticipation and excitement. SCUBA diving is a dance with the ocean, where every movement should be in harmony with the currents and creatures around you. The ocean is a vast playground full of magic and adventure beneath the surface waiting to be explored, and as Helen Keller aptly put it, ***"Life is either a daring adventure or nothing at all."***



Jellyfish (Vizhinjam)



(Dr Jyothi EK is working as Scientist-C in the Department of Microbiology, Hospital campus, SCTIMST, Trivandrum)



Every Father is a Superman!

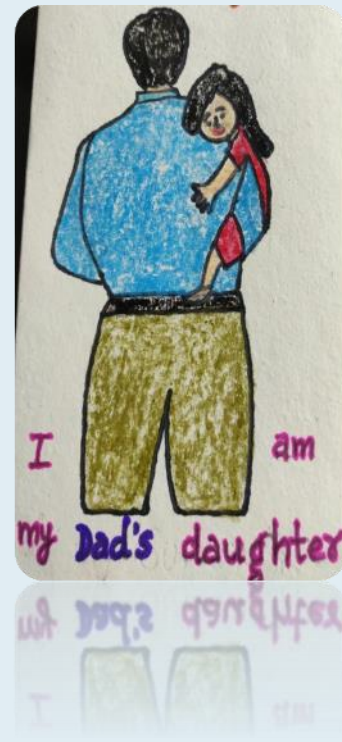
From the time I can remember, he has been my go-to person for any problems and he has found solutions to each one of them. One incident that I can recollect is from my hectic days of house-surgency, when after taking continuous duty for 48-72hours, one evening, I was returning home in a private bus. As soon as I got a seat to sit, with the gentle breeze caressing my face, I fell asleep. When I woke-up, bus was already past my bus stop. I hurriedly got down and walked back to my stop. My father was already there waiting for me with the torch, because it was getting darker. When I get into the bus, I usually call home to inform that I am coming. This served me good, in that my mother got ready my dinner, so that I could relish it as soon as I got home, after two or three days of canteen food. We merrily walked the remaining distance, discussing the happenings of the day and my father nodding his head. As we turned towards my house, I could already get the aroma of dinner that was waiting for me. I devoured the food my mother had prepared as soon as I reached home. After I had washed my hands, I looked for my phone. That's when I realized, I had lost my phone in the bus, it must have slipped from my hands, when I dozed off.

I remember, I really didn't feel any anxiety. Somehow, I felt if I tell my father, he will get it back. I went and told my father. He asked me details of the bus. I couldn't remember the name of the bus. It wasn't the bus, I usually travelled. My co-house surgeon had reported a little early, so I was relieved a little earlier than the usual 8pm.

After this, I don't remember much. I slept off on the sofa itself. I was woken up by the loud noises of my brother who was describing in detail their adventure. I got up suddenly all curious. That's when I realized it was past midnight and my father handed me my phone. I happily hugged him.

All the while my mother was wondering at my remorselessness, and asking how could I sleep so peacefully, even after losing the mobile phone. I happily replied that since I knew, my father would get it back, I wasn't anxious. Hearing this, my father only smiled.

My father and brother had set out to find my phone totally clueless. They reached my usual bus stop and enquired, but it yielded no results. Then they both went to medical college bus stop and enquired about the buses from the shop near the bus stop. Based on the information, they got the possible buses and made enquiries about their possible parking at night. I don't know, how many kilometres they both would have travelled that night, in search of my phone, without having any GPS or other technology for aid, but they got back my phone.



Such is my confidence in my father, that I know, even if I tell my father to catch the moon, he might find a way.

I know every daughter would have many such stories to share about their fathers.

**A FATHER'S TEARS AND FEARS ARE UNSEEN
HIS LOVE IS UNEXPRESSED
BUT HIS CARE AND PROTECTION REMAIN AS
PILLAR OF STRENGTH
THROUGHOUT OUR LIVES**
Ama H Vanniarachchy

(Dr Amita R, Associate Professor is the Department of Transfusion Medicine, SCTIMST)

QUIZ 2

What is Code Grey Protocol in hospitals?

Please submit your reply with Name, Department to the email: enewsletter@sctimst.ac.in before 15th August 2023.

First three entries will be featured in the next issue of the Chitra Dhvani.

I may not express my feelings to you but I love you the most for being the best parents in the world. Today, I want to thank for everything you did for me. Happy Parents' Day to you.....



Camera Captures by Chitra Family Members

Cats in the box



(Dr Aruna S Venu, PhD, AMCHSS, SCTIMST, Trivandrum)

Hope



When sky, water and land merge



(Sreejith, Project Assistant, Dental Products Laboratory, BMT wing, SCTIMST, Trivandrum)

Royal View



(Er Nagesh DS, Scientist G, Sen Grade, Division of Extracorporeal Devices, BMT wing, SCTIMST, Trivandrum)



Camera Captures by Chitra Family Members

Rare but Here



(Er Nagesh DS, Scientist G, Sen Grade, Division of Extracorporeal Devices, BMT wing, SCTIMST, Trivandrum)

Kingfisher in the Poovar Marshland



(Dr Kamalesh K Gulia, Scientist G, Division of Sleep Research, BMT wing, SCTIMST, Trivandrum)

Upside down Mirror Image: Which is Real one



(Sajin Raj RG, Technical Assistant B, Division of Bioceramics, Ceramic Coating facility, BMT wing, SCTIMST)

Paired Beauty



Red Vented Bulbul Waiting for Monsoon



(Dr Kamalesh K Gulia, Scientist G, Division of Sleep Research, BMT wing, SCTIMST, Trivandrum)

When you do something noble and beautiful and nobody noticed, do not be sad. For the sun every morning is a beautiful spectacle and yet most of the audience still sleeps



Camera Captures by Chitra Family Members (Director)

The morning riot of colours



The resting boats



Camera Captures by Chitra Family Members (Director)

The final destination



The saint and his vision



The citadel in darkness



The night colours of street



A good life: A steady rock against the turbulent sea



(Pictures taken in Cape Comorin, Kanyakumari region, Tamilnadu)



Camera Captures by Chitra Family Members (Director)



(Pictures taken in the spiritual capital of India, Varanasi, Uttar Pradesh)



Camera Captures by Chitra Family Members (Director)



(Pictures taken in the spiritual capital of India, Varanasi, UP)

(Dr Sanjay Behari, Director, SCTIMST contributed the pictures showcased in pages from 55-58)



Welcome to the Chitra Family



Chitra Dhvani Editorial Team 2020-2023



Editorial Team 2020-2023 (left to right): **Mr Arumugham V** (Calibration Cell, BMT wing), **Er Suresh Kumar** (Acting Head, Computer Division, Hospital Wing), **Dr Jissa VT** (AMCHSS), **Dr Amita R** (Department of Transfusion Medicine, Hospital wing), **Mr Liji Kumar** (Medical Illustration, Hospital wing), **Mr Sajin Raj** (Bioceramics lab, BMT wing), **Dr Divya MS** (Department of Pathology, Hospital wing), **Dr Kamalesh K Gulia** (Head, Division of Sleep Research, DAB, BMT Wing) and **Dr Manoj Komath** (Head, Bioceramics Lab, BMT Wing)



Journey of Chitra Dhvani 2016-2023, Phase II-III

In 2013, Chitra Dhvani was launched under the able leadership of **Prof K Radhakrishnan (Director at that time)** as a quarterly e-magazine of SCTIMST with Dr Kamalesh K Gulia as the Chief Editor. Every year three issues were regularly released (keeping one of the issue as combined one). Initial issues also captured the rich heritage and historical perspectives in addition to the novel activities of the departments, achievements of all the staff members in all the scientific, clinical and extracurricular domains. In 2016, Dr Srinivas G took over the baton of running the e-zine nicely until 2018. In 2020, Dr Kamalesh K Gulia again resumed the charge as Chief Editor during COVID pandemic during last of **Prof Asha Kishore (then Director)**. It has now become a powerful forum to showcase the activities and hidden talents of our Chitra family members, and to rejoice their success and achievements as a team in fun filled flavour. **On successful completion of 10 years of its Journey, I express my gratitude to each and every member for their regular contributions, timely feedbacks and ABOVE ALL for joyfully reading it.**



Journey of Chitra Dhvani 2013-2015, Phase I

