

Vol. October 2023



2023 STEPAN Newsletter

The National Institute of Science and Technology of Timor-Leste Strengthens the National Science, Engineering, Technology, Innovation (SETI)



The National Institute of Science and Technology (INCT) aims to excel in scientific research, intellectual heritage, and technological innovation in Timor-Leste. Their mission includes advancing scientific knowledge to international standards, promoting research, and preserving the country's intellectual heritage for the benefit of society.

In 2023, Timor-Leste's National Institute of Science and Technology (INCT) strategically identified five fundamental areas crucial for the nation's development:

- 1. Innovation, Technology, and Infrastructure;
- 2. Education, Human Sciences, and Social Inclusion;
- 3. Health and Wellbeing;
- 4. Economy, Agriculture, Tourism, and Industry; and
- 5. Environment, Biodiversity, and Climate Action.

These areas, intricately aligned with the United Nations Sustainable Development Goals and Timor-Leste's national plans(2011-2030) and the INCT strategic plan (2022-2030) to form the backbone of INCT's research initiatives.

The ultimate goal of these endeavors is to contribute significantly to Timor-Leste's progress and prosperity. By basing decisions on the most reliable and current data, backed by thorough scientific research, the East Timorese government can make informed policy decisions that positively impact the nation's development trajectory.

Based on the above objectives, the INCT has funded eleven scientific research projects that have been carried out in the field, namely in the fields of innovation, education, health and well-being, economics, agriculture, tourism, industry and the environment.







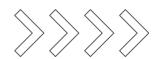
Assoc. Prof. Dr. Aini Suzana Ariffin

Chair and Malaysian representative for STEPAN

Dr Aini Suzana Ariffin is an Associate Professor from Perdana Centre of Science Technology Innovation (STI) Policy, Universiti Teknologi Malaysia (UTM) in Kuala Lumpur, Malaysia. She holds a PhD in Science, Technology and Innovation Policy Management from University of Manchester, United Kingdom, a Master and Bachelor's Degree in International Business & Management from France and the United States of America respectively. She has 33 years experience in STI Policy Development, Masterplan & Strategic Planning, Budget Planning as well as International Strategic Alliance and Collaboration.

Dr Suzana has a proven track record for successful network and collaboration, both at national and international levels. Throughout her career, she has served in various leadership roles which have provided her with substantial and diverse expertise. In view of this achievement, she has been appointed as the National Focal Representative (NFR) for Malaysia and later elected as the Chair for The Science Technology Engineering Innovation Policy Asia and the Pacific Network (STEPAN) under UNESCO. Since then, together with four Co-Chair from STI institutions from South Korea, Uzbekistan and Sri Lanka, as well as Project Specialist of UNESCO and Secretariat, various initiatives and activities were carried out to ensure STEPAN's Action Plans 2022-2025 is being implemented successfully.

Prior to this UNESCO appointment, she was appointed as the Deputy Secretary General of World Organization of Industrial Technological Research (WAITRO) under the auspices of the United Nations, the Focal Point for the Global Research Alliances (GRA) in Columbia, USA, the Resource Person for Asia Pacific of Technology Transfer (APCTT) under UNESCO, a Board Member for Asia Innovation Forum, KISTEP, South Korea, as well as a member for Gender Summit Asia Pacific in South Korea. Based on her aggressive engagement and commitment to the development and implementation of Malaysia National Artificial Intelligence Roadmap (2021-2025).





On March 8 to 10 March and May 18 & 19 May 2023, STEPAN, ISTIC, UTM and UNESCO worked closely to organize two hybrid workshops on 'Enhancing & Strengthening Regional Open Science Mechanism and 'Open Science Dissemination Workshop' in Kuala Lumpur. The key objectives of the workshops were to obtain the regional feedback on the effectiveness of Open Science (OS) policy implementation and come up with recommendations on how to enhance public policy investment to promote Open implementation mechanism. At the first workshop, she introduced the Open Science Policy Implementation (OSPI) framework for adoption with the hope to enhance the OS policy implementation effectively.

To ensure effectively implementation OS Recommendation effectively, Dr Suzana becomes one of the members for three Working Groups of UNESCO focusing on 3 out of 5 High Impact Areas namely; Capacity Building, and Policy Instrument and Infrastructures. Subsequently on 31 May 2023 together with SOI Asia (School on Internet Asia Project), STEPAN have successfully organised a workshop on 'Open Science Infrastructure and Leveraging on Artificial Intelligence for An Effective Open Science Platform' in Jakarta. This initiative is aligned with STEPAN SETI Governance which specific consideration to enhance common understanding of OS and the effectiveness of public policy and investment to promote OS; to improve the legal and institutional system of producing, managing, sharing, and utilizing the results of R&D in a reliable and responsible manner;



to promote sharing of best knowledge management practices, open science policy information, and related data collected and analysed among member states as well as to enhance regional and cross-border cooperation on OS and digital transition in the Asia-Pacific Region.

Besides international contributions, she also actively leads and facilitates various developments of STI Policies, Technology Roadmaps and Masterplans. Among others are the International Science, Technology, & Innovation Centre (ISTIC), the National STI Policy, Corporatization Policy of Government Linked Companies, High-Performance Indicators for Government Agencies, Technopreneurship Policy for Higher Learning Institution, Strategic Plan for MOSTI and the Department of Environment, as well as various national technology roadmaps including The Advanced Manufacturing, Advanced Materials and Artificial Intelligence. Acknowledging the importance of AI policy and strategy for addressing the ethical, economic, and societal implications of AI, ensuring its safe and responsible use, and maximizing its potential benefits while minimizing its risks, she is currently working on Al Governance framework to guide AI development and deployment in a way that aligns with the interests of individuals, communities, and society as a whole.



In the early 1987, she began working as Senior Executive of Strategic Planning and Budgeting in a subsidiary of national petroleum company and later moved to PETRONAS National Berhad. She contributed to the development and coordination of commercial strategies such as annual business plan and budget, and the formulation of the budgeting policies and guidelines, provided advisory services on budgetary control as well as facilitated the preparation of yearly budget to Petronas Group of Companies. At the same time, she developed various feasibility studies on commercial and technology business opportunities for Management and Board approval.







She was immediately recognized for her acumen and continued to rise through the ranks before taking on various senior management roles within the group. Based on her qualification and huge experience and impactful engagement, today she is one of the competent policymakers, policy analysists and policy evaluators. She is also a qualified, professional trainer in Strategic Planning, Business Development Entrepreneurship where she had brought high impact on the nation building and economic growth in Malaysia. Among national projects include the Kuala Lumpur City Center (KLCC) and Kuala Lumpur International Airport (KLIA) Projects on Gas District Cooling System in utilizing natural gas for energy and air-conditioning and the Human Capital Development Project to support KLCC project transformation project.

Networking is the Number One unwritten rule of success in STI Policy implementation.

Assoc. Prof. Dr. Aini Suzana Ariffin





While being attached to one of the Government Linked Companies (GLCs), she was directly involved in the implementation of Corporatization Policy establishment of various Operating and Management Systems that suit the new government business entity as well as the establishment of National Research Laboratories, National Science Parks as well as National SMEs Incubation Centre. She also contributed to the launching of the MEASAT-3, based on Boeing 601HP satellite into space at Baikonur in Russia. Other than that, she was appointed as the Board Member for a few Governments Linked Company's subsidiaries and acted as a panel and judge for Quality System and Product Made in Malaysia & Brand Award as well as National Innovation Award Committee organized by various ministries.



Universiti Teknologi Malaysia (UTM) is a premier Malaysian public research-intensive university and when joining UTM in 2013, Dr Suzana played an important role in the establishment phase of the university policy development which focused on Academic, Research & Innovation as well as Services. She is currently the advisor for the development of UTM Sustainability Blueprint 2030 which is now in the implementation stage, one of the management committee members for Quality & Strategy, Curriculum Review, Career Pathway and auditor for UTM. For the last 10 years, she has successfully supervised and graduated 30 PhD and Master students in the field of Science, Technology & Innovation Policy and Strategic Management & Business.



Contact:
Assoc. Prof. Dr. Aini Suzana Ariffin
Perdana Center of STI Policy,
Faculty of Technology & Informatics Razak
Universiti Teknologi Malaysia
Kuala Lumpur, Malaysia
ainisuzana@utm.my





These days, she actively contributes and knowledge at national and international seminars and conferences as the key speaker or speaker organised by many government agencies, national research institutes, local universities and associations. Her important topics delivered include STI Policy Development and Implementation, Innovation Ecosystem and Technology Commercialization, Open Science Policy Implementation, The Development of Policy and Governance Framework, Responsible AI and Ethical AI, SDGs Performance Indicators and Government Intervention; Technoprenuership for Higher Learning Education, Grassroots Entrepreneurship Initiatives in Developing Countries and etc. Subsequently, she managed to publish more than 40 articles in her field of expertise such as Open Innovation Business Model; Strategic Plan for Malaysian SMEs Business ventures; Measuring Malaysian Public Sector Innovation Performance, Entrepreneurship Action Plan Higher Education Institutions and Aligning Core Competencies with Malaysia's Industry 4.0 Policy Aspirations. She is among the editors for STI Policy and Socio-Economic Development namely Frontier, Scientific Research, Greece and the Journal STI Policy of Malaysia.



As the Chair of STEPAN, she is willing and ready to share knowledge related to STI Policy for the state country members of STEPAN particularly from developing and less developing countries.

56th Asia-Pacific Advanced Network Meeting (APAN56)

21 - 25 August 2023 (Colombo, Sri Lanka)



In the heart of Colombo, Sri Lanka, the 56th Asia-Pacific Advanced Network Meeting (APAN56) was recently organized by <u>LEARN</u>, Sri Lanka's National Research and Education Network (NREN).

This gathering, a testament to Sri Lanka's growing role in fostering regional cooperation, brought together researchers and NREN personnel across the Asia-Pacific region. Over 5 days, APAN56 showcased a diverse array of 79 distinct sessions, ranging from insightful plenary keynotes, thought-provoking discussions among its working groups, the inaugural APAN conference spotlighting innovative research, an active datathon for undergraduates, and collaborative sessions among NREN leaders. Thus, it was not merely a convergence of minds but a platform that propelled collaborative research and innovation, promising to leave a lasting imprint on the Asia-Pacific region.

On the invitation extended by Mr Veerachai Tanpipat, HII-ThaiREN, Thailand at the third board meeting of STEPAN with the sponsorship received from National Information Institute (NII) of Japan Dr Mahesha Nadugala, Vice Chair of SDG technologies join actively in discussions held with the working groups. Especially with the working groups on Open Science and Data Sharing and Medical and a delegation from APANS participants visited National Science Foundation of Sri Lanka and had a fruitful discussion with the Director General and Senior officials of NSF on future collaboration.









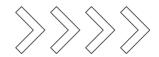
Dr LIM Tit Meng

Singapore representative for STEPAN

TM Lim is the Chief Executive of Science Centre Singapore since 2010. He is a biologist graduated with a doctorate degree (PhD) from the University of Cambridge in England, after attaining a BSc (Hons 1) in Zoology from the National University of Singapore (NUS). He is concurrently an Associate Professor of Biological Sciences in NUS and was Vice Dean of Science before being invited at end of 2009 by the Ministry of Education (MOE) to take on the role of Chief Executive for the Science Centre Board. He is an elected Fellow of the Singapore National Academy of Science and Honourable Fellow of the Singapore Institute of Biology, for recognition of his contributions in science communication and promotion of biological sciences.

Before he came into the science centre field, TM Lim has already established a long track record of efforts in science outreach and science popularization. He has played a strategic role in promoting life sciences when Singapore decided to set up the Biopolis as a hub for biomedical R&D.Over his more than 30-years career, he has given numerous talks and public lectures to students, parents, educators, industrial professionals, policy makers and political leaders. He is a well-known science communicator not just to schools, students, educators and scholars, but also to the general public locally and internationally because he often appears on television, radio interviews, as a Guest-of-Honour in various events, and even in public engagement activities held in shopping malls.

He is a familiar face in Singapore formal and informal education arena, and a well-regarded personality among the international science centre networks as a thought leader. His other current appointments include President of the Singapore Association for the Advancement of Science (SAAS); President of the Asia Pacific Network of Science Centres (ASPAC); President of the Singapore National Academy of Science (SNAS). He is an active member of the Ministry of Education (MOE) Primary & Secondary Science Curriculum Review Committee. He chairs the MOE Translation and Innovation Project Grant Committee, co-chairs the MOE STEM Education Programme Committee, and Vice Chairman of a School Advisory Board.





He is a Director in the Temasek Foundation Liveability Board; the Singapore Bioethics Advisory Committee, and a member in Ministry of Health (MOH) Precision Medicine Steering Committee. He has also served as a Director in the Board of the Association of Science & Technology Centres (ASTC) for 6 years, and he remains an active member in the Science Centre World Summit ecosystem. His latest active role involves the International Directors Forum organized for global science centres and museums directors to share practical knowledge and strategic insights on the future of the science engagement field, with the focus on the issues of the Climate and Biodiversity Crisis, Misinformation and fostering Critical thinking.

He has won many awards over the years, including university teaching awards, ASPAC Creative Science Communication Awards for script writing original stories for science musicals. His other brainchild for a highly successful exhibition entitled The Human Body Experience was recognised for another ASPAC Award for Creative Science Exhibition. For his impactful service and contribution to the nation, he was bestowed a National Day Public Administration Medal (Silver), and National Day Award (Long Service) award both in 2016. He has successfully transformed the science centre as a visionary leader and his work of excellence attracted the invitation by the Sarawak Minister for Education as a Master Planning Consultant for the proposed Sarawak Science Centre which is now under construction. He has also been invited to conduct STEAM workshops for teachers in Indonesia.



Under his leadership he has set up many first-of-its-kind projects and programmes to popularize science and promote the Power of STEM. They include the KidsSTOP as the first children science centre in Singapore targeting 8-year-old and below; the KidsSTOP Academy for parentchild co-learning of science; the STEM Inc as a special unit to execute STEM Applied Learning Programme and Industrial Partnership Programme for mainstream schools; the Singapore Academy for Young Engineers and Scientists (SAYES) as a youth club combining the Power of STEM and the Power of Youth; the Singapore Science Buskers Festival; the Singapore Science Festival; the Singapore Makers Extravaganza; the Science Drama Competition which became international; the Drone Odyssey using everything about drones to promote STEM; the National STEM Championship which is broadcast on TV and on-demand platform; the UNTAME Festival that popularize science to all. He has chaired the committee that set up the 'Be a Scientist for a Day' exhibition corner which is never seen in any science centres in the world, to make the philosophy of science and the scientific methods come alive, with hands-on minds-on activities and experiments. It is now a regular place for students and teachers, and teachers-to-be, to practice scientific thinking and scientific communication.

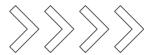




The Science Buskers Festival which he created in 2008 has even reached Africa where like in Singapore, it has become hugely successful there, with students taking part in science performances in the yearly festival. It serves to stimulate fun in science learning and science communication through intriguing demonstration of science tricks or phenomena. He is passionate about science engagement not just within Singapore but beyond. One example is his involvement in the World Organization for Science Literacy based in Beijing, China.



Contact:
Dr LIM Tit Meng
Science Center Singapore
<u>lim_tit_meng@science.edu.sg</u>







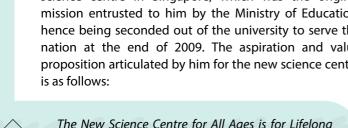
Making the Science Centre without walls and transcending time and space, he has initiated a Transmedia Team in the centre to create online content to popularize science. He advises and edits the scripts for the video productions. He is also instrumental to push the long running 'I am a Young Scientist' programme to go fully digital, making the Young Scientist Badges available to more than 10 countries. The MOE has also given a strong support to all primary school students to access and partake in the programme.

One of the most remarkable indicators of how effective TM Lim is in revamping the image of a science centre, changing its perceived status as only good for junior schools and families with young children. The Science Centre Singapore is now recognised even by bloggers on some social media platforms as one of the most interesting places for young adults. The seniors and aged folks in the community are also finding the science centre very relevant to them, especially with the installation of a special exhibition on ageing entitled 'Dialogue with Time', employing senior guides aged 65 and above to explain everything about aging, including dementia challenges.



With all his paradigm shifting and creative courage, he has successfully demonstrated to the government how the science centre is an impactful civic and cultural installation. It is poised to help Singaporeans in lifelong learning through science literary and application of science, technology, engineering and maths, interfacing with social sciences, philosophy, arts, ethics, values, empathy, compassion, accountability, and cohesiveness, because Science is a Universal Language for all.

The exciting project for TM Lim is the building of a new science centre in Singapore, which was the original mission entrusted to him by the Ministry of Education, hence being seconded out of the university to serve the nation at the end of 2009. The aspiration and value proposition articulated by him for the new science centre



The New Science Centre for All Ages is for Lifelong Learning, through Joyful and Ageless Experiences, for Mindful Appreciation and Application of the power of STEM+, developing STEM talents by nurturing their Inquisitive + Investigative + Innovative predispositions (aka the 3-IN things they are born with), and growing Happiness in our community, nation and even the world.









Tesla Coil Show, Science Center Singapore

Ministry of Education and Science of Mongolia Fosters Innovative Initiatives Through the MON X Program



The MON X program, initiated by the Ministry of Education and Science of Mongolia, is dedicated to fostering innovative initiatives within our community. Our primary mission is to drive research, economic transformation, and technological progress.

Key Achievements:

- 1. Empowering Local Science Council Members: We trained 48 local science council members, enhancing their innovation capabilities.
- 2. Data-Driven Innovation: We collected data on 2,000 local challenges and 234 national issues, identifying areas for innovation.
- 3. Community Engagement: Engaging 1,111 community members increased awareness and enthusiasm for innovation.
- 4. Workshop Excellence: We hosted a workshop with 105 participants, surpassing our goal.
- Pre-Accelerator Program: Our pre-accelerator program received 251 proposals, promoting innovation.
- 6. Precise Targeting: Effective analysis of problem data allowed us to target innovation efforts precisely.
- 7. Advanced Innovation Workshops: Our workshops empower participants to tackle challenges using design thinking.
- 8. Thriving Startups: We nurtured 15 startups in their early stages, with 70% securing next-round funding.
- Vibrant Innovation Festivals: Four provinces witnessed vibrant innovation festivals, fostering creative engagement.

Best Initiatives of the Program:

- 1. Green Fodder Planting at Herdsman's Homes
- 2. Virtual Sign Language Translator
- 3. Automatic Food Dispensing Machine
- 4. Crafting Saddles from Plastic Waste
- 5. Mushroom Winter Greenhouse Combinations
- 6. Dung Paper Production
- 7. Allied Technology for Leather Processing Devices
- 8. Fibrin Protein Wound Bioadhesion
- 9. Life Investment Platform



