

VIDYA

The Quarterly Newsletter of the National Science Foundation



Volume 21, No. 04 December 2019 ISSN 1391-4367

Rewarding Scientists for Research Excellence

Rewarding for high-performing research is a strategy embraced by the NSF to motivate scientists to carryout research of high-quality. Sri Lankan scientists & engineers who have made outstanding contributions in their respective fields for socio-economic development were rewarded at the annual awards ceremony of the NSF held on 18th December 2019 at the BMICH. Hon. Dr Bandula Gunawardena, the Minister of Higher Education, Technology & Innovation and Hon. Thilanga Sumathipala, the State Minister of Technology & Innovation graced this

occasion as the Chief Guest and the Guest of Honour respectively. The Secretary to the Ministry of Higher Education, Technology & Innovation, Mr Anura Dissanayake and the Secretary to the Ministry of Technology & Innovation, Mr Chinthaka S. Lokuhetti also participated in the ceremony as Special Guests. Prof. Malik Ranasinghe, Senior Professor of the University of Moratuwa and the Chairman of Sampath Bank PLC delivered the keynote speech on the topic “Benefits of Research?”.



In this year, high-performing research projects completed in 2018 were appraised. The Judging Panels had recommended five completed projects for NSF Research Awards and seven for Certificates of Commendation. Under the Technology Stream, one Certificate of Commendation was presented. Twelve awards were presented to the supervisory teams under “Support Scheme for Supervision of Research Degrees (SUSRED)”. The World Academy of Sciences (TWAS)/ NSF Young Scientist Award 2018 in the field of Biology was awarded to Dr Ranil Jayawardena from the University of Colombo.



Dr Ranil Jayawardena, Senior Lecturer in Physiology, University of Colombo & Clinical Nutritionist is receiving the World Academy of Sciences (TWAS) / NSF Young Scientist Award 2018 in the field of Biology



NSF Research Awards 2018: The Winners of Research Excellence



Prof. Malik Ranasinghe, Chairman/Sampath Bank PLC delivering the keynote speech

Celebrating the World Science Day

The NSF has been celebrating the World Science Day in Sri Lanka annually from 2004, since UNESCO declared 10th November as the World Science Day for Peace and Development at its General Meeting held in 2001. The “World Science Day 2019” was held on the 1st of November 2019 at the BMICH under the theme, “Sustainable Use of Earth Resources”. More than 1600 school children, teachers, undergraduates, scientists and science communicators participated at this event. The Secretary to the then Ministry of Science, Technology and Research, Mr Chinthaka S. Lokuhetti graced the occasion as the Chief Guest of this event. The Keynote Address of the event was delivered by Dr P. B. Dharmasena, an eminent Soil Scientist in the country.

The Winners of variety of science competitions; Inter School Science Society, Science Research Project Competition (SRPC), as well as the participants of the International Science and Engineering Fair (ISEF) were felicitated on this day.

The NSF Media Award for media personnel was first awarded in this year for active engagement in science popularization and improvement of science literacy of the country. Prof. M. T. M. Jiffry memorial Award for science popularization, which is a life-time award was presented to Prof. Rangika Umesh Halwatura from the University of Moratuwa. Star rating awards for best performing school science societies and teachers’ awards recognizing the contributions to promote science education in schools were the other awards among many presented on this day.



Dr P. B. Dharmasena, Visiting Lecturer of Rajarata University delivering the keynote speech

Prof. Rangika Umesh Halwatura, Professor in Civil Engineering of University of Moratuwa is receiving Prof. M. T. M. Jiffry memorial Award (lifetime award) for science popularization

Exposure Beyond Boundaries

Exploring for STI progression

Establishing scientific cooperation with organizations abroad has been a continuous effort of the NSF in strengthening STI potential of the country. A series of meetings was held in Sri Lanka this year with the aim of tapping scientific resources overseas.

The first meeting with HE John Rodhe, the Ambassador of the German Federal Republic to Sri Lanka was held on the 23rd September 2019 at the NSF, led by Dr A. M. Mubarak, the former Chairman/NSF along with the participation of Mr P. Selvaraj, Additional Secretary/ Ministry of Foreign Affairs and Prof. Ananda Jayawardane, Director General together with the officers of the NSF. The possibility of establishing linkages between NSF and the Fraunhofer Institution, a leader in technology transfer and upgrading, was discussed at this meeting. Subsequently, Prof. Joybrato Mukharjee, the President (2020) of the German Academic Exchange Service (DAAD), Dr Katja Lasch/ DAAD Regional Director and Mr Nadeesha Palliyaguru/ DAAD Information and Office Manager, Sri Lanka visited the NSF on 15th November 2019 to discuss about the existing cooperation and way forward. Organizing a trilateral collaborative workshop on dengue in New Delhi in 2020, arranging a visit to German science museums by the scientists involved in setting up of the National Science Centre in Sri Lanka and taking steps to increase the number of applications in the field of Social Sciences were the topics discussed. "NSF-DAAD Project based Personnel Exchange



Prof. Joybrato Mukharjee/President (Elect) DAAD is receiving a token of appreciation from the NSF.

When the HE Robina P. Marks, the High Commissioner of South Africa visited the NSF on 7th October 2019, the discussions on S&T cooperation with South Africa was initiated. Satellite technology for agriculture improvement, dryland agriculture, desalinization, biodiversity, value addition to natural products (Cinnamon), renewable energy, mapping and value addition to mineral resources were identified as some of the potential areas for collaboration under the current Bilateral Agreement on Science and Technology between the two countries.



Meeting the with HE Robina P. Marks /High Commissioner, South Africa

Another meeting on bilateral scientific cooperation was held on 5th November 2019 at the Egyptian Embassy between HE Hussein El Saharty, the Ambassador of the Arab Republic of Egypt and a team of NSF officials. Cooperation in transfer of technologies and know-how in precision agriculture, biopharmaceuticals, water purification and collaborations on training & knowledge sharing in library sciences and the design and management of science centres were discussed.

The possibility of initiating an MoU between the NSF and the Commonwealth Scientific and Industrial Research Organization (CSIRO) was explored at the meeting with the Australian High Commission held on 13th November 2019 at the premises of the High Commission. A team of Australian diplomats guided by the HE David Holly, the High Commissioner and NSF Officials steered by Dr A. M. Mubarak the former Chairman and Prof. Ananda Jayawardane, the Director General took part in the discussions. The NSF was invited to conduct an awareness programme at the Australian Education Fair organized by the High Commission in February, 2020.

The meeting with Ms Susan F. Walke, Economic Section Chief and Mr David J. McGurie, Public Affairs Officer of the Embassy of USA held in the Embassy premises with the participation of Prof. Ananda Jayawardane, the Director General and the NSF officers paved the way to discuss the areas of capacity building, training and science popularization. The discussions continued when the NSF was represented at an Inter-Agency meeting on collaborations with USA on 26th November 2019 held in the Ministry of Foreign Affairs organized by the North American Division of the Ministry.

Information Gateway

Reaching Public through a Manpower Information System

Science & Technology Manpower Information System (STMIS) from its inception in 2004 strived for gradual progression in serving the needs of its stakeholders. Individuals and institutions were given the provision to feed information online directly on their expertise and research outputs. The information on advanced scientific equipment and training programmes offered by the research institutions were the other forms of data contained in the database. As a result, a significant number of Persons and Institutions entered their information to the System. However, the System became obsolete with time due to outdated software and consequently, the interaction between the S&T community and the general public was declined. With the aim of restoring the academic-industrial and public interaction with S&T, the NSF introduced the upgraded STMIS in October 2019.



The benefits provided by the STMIS is enormous. While serving as a one-stop information source on science-related expertise in the country, STMIS provides several other facilities. The S&T personnel who are registered with the STMIS are kept abreast of opportunities that are available to them locally and internationally. This includes information regarding scientific fora for awareness and capacity building, opportunities for funding and collaborations, as well as, career opportunities such as scholarships, fellowships, and vacancies in the S&T sector. Organizers of scientific events can benefit from the STMIS since it directly routes the messages to the beneficiary, increasing the response rate.

STMIS

online system which contains information on S&T resources in the country

STMIS contains

- Information on S&T personnel & their expertise
- Research and publications of the individuals registered
- Scientific services and training programmes provided by different organizations
- Availability of advanced scientific equipment

Eligibility Criteria for registrants

- Having a basic degree in science including social sciences
AND
- Working in a field related to science and technology

Benefits

- Visibility to your work
- Updates on important events and opportunities in the field
- Being eligible to apply for grants and other services offered by the NSF

Reach us

<http://stmis.nsf.gov.lk/>
stmis@nsf.gov.lk
+94 11 2675841



The upgraded STMIS is being launched by the Honorable Thilanga Sumathipala, the State Minister of Technology and Innovation. The Secretary, Mr Chinthaka S. Lokuhetti & the Additional Secretary, Ministry of Technology and Innovation, and Acting Chairperson of the NSF Mrs Nandanie Samarawickrama are joining the Minister

A Strategic Partnership with DCS to improve on the R & D Survey

The NSF is mandated to collect Research and Development related information from all relevant stakeholders of the country. Falling into 4 categories, namely, State Sector R&D Institutes, Private Sector Business Enterprises, Higher Education Institutes, and Private Non-Profit Organizations, the survey is systematically designed meeting international standards and is conducted on regular basis by the NSF partnering with other government organizations. Data pertaining to the R & D activities of higher education institutes are collected by the University Grant Commission (UGC).

The contribution of Business Enterprises to national production as well as to R&D activities of the country are well recognized in this endeavour and these are measured under a separate category. Due to various reasons, the NSF confronted with various difficulties in collecting data under Business Enterprises category. Having considered the mandate of the DCS and their expertise in conducting national level surveys, the NSF entered into a strategic partnership with the Department of Census and Statistics (DCS) for collecting data under this category for the National RDI Survey of 2018. Accordingly, a MoU was signed between the NSF and DCS on the 6th September at the NSF. On

behalf of the two institutions, Prof. Ananda Jayawardane, the Director General of the NSF and Ms Indu Bandara, the Director General of DCS signed the MoU.

According to this MoU, the DCS will collect data on RDI activities done by Private Sector Business Enterprises from this year onwards. The two institutions will share their expertise and resources to conduct a successful survey island wide. With newly established partnership with the DCS, the NSF is able to overcome the obstacles and increase the response rate of the Business Enterprises to the survey. With data collection done for 2018, it became explicit and as a result the partnership with the DCS will be able to measure the economic values of the R&D activities of the country more realistically and with precision.



The NSF & DCS are signing the MoU and handing over.

NSF Develops an Online Database Platform for the Health Sector

The National Science Library and Resource Center (NSLRC) of the NSF is the first library in Sri Lanka that developed an integrated database management system, <http://viduketha.nsf.ac.lk>, based on Java CDS/ISIS software. In line with its mandate to help in designing & developing databases for other libraries in the country, NSLRC recently designed a J-ISIS online database platform for Health System Research Unit (HSRU) of the Department of Community Medicine, Faculty of Medicine, University of Colombo.

This is a comprehensive bibliographic database platform which contains research related to major non-communicable diseases (NCDs) and risk factors in Sri Lanka. The system is presently hosted on the NSF J-ISIS server and it was made accessible to the general public at a launching ceremony held on 22nd October 2019 at Waters Edge, Battaramulla.

J-ISIS is a flexible Information Storage and Retrieval System designed specifically for the computerized management of structured non-numerical databases. J-ISIS clears many of WinISIS (previous version of J-ISIS) limitations and restrictions. Furthermore, the J-ISIS embedded web browser and web server offers the possibility to use the new web technologies such as HTML5, CSS3, and JavaScript inside ISIS print formats.

Science for All

Transforming Aqua Weeds to Eco-materials

Fertilizers of natural or synthetic origin is used for the purpose of soil management and enhancing the growth of plants. Currently, there is an upward trend in the use of organic fertilizers by customers. The use of aquatic weeds for this purpose is new in this scenario.

The aquatic weed “water hyacinth” (*Eichhornia crassipes*), is the most invasive alien aquatic plant species growing in water tanks and lakes. The compost block made of this weed has entered the market with the NSF support given to Mr Nihal Dharmasiri, a grassroot level innovator. The Block sold at agrarian services outlets is ideal for urban agriculture. The spread of the weed as a blanket in many lakes is a menace for water bodies, limiting the availability of water for cultivation, drinking and other purposes in village communities.



Plants grown in a compost block



A mix of naturally available materials with dimensions 10” x10” x 10” & 12 kg weight

Income generation through a pollutant, cleaning aquatic water bodies, reducing the use of chemical fertilizers, and employment opportunities for village community are the benefits accrued through this project. Having identified the social impact of introducing the technology to other rural communities where lakes are heavily attacked by invasive species, the NSF initiated knowledge transfer activities targeting the village community in Katagamawa, Nikaweratiya area. With the support of Nikaweratiya “Vidatha” Resource Centre, a programme was conducted to transfer the knowledge and the technology.

A village person said, “We use the stem of the plant to make ornamental items and all the other parts are just thrown away. This technology is very much valuable for us and we can now get into new developments”



Katugamuwa lake covered with Water Hyacinth



Demonstrating the use of Water Hyacinth to make compost blocks



Village people participating in the programme

Milestones in Safe Biotechnology Research in Sri Lanka

Modern Biotechnology is comparatively a novel field in which living organisms are used to gain high yields as well as crops tolerant to climate change. However, as with any invention, unpredicted risks are involved in these approaches. The “Cartagena Protocol”, an international agreement aiming to ensure the safe handling of Genetically Modified Organisms (GMOs), was introduced in the year 2000. Sri Lanka ratified the Cartagena Protocol on Biosafety in 2004.

Although the scientific advancement in Modern Biotechnological research in Sri Lanka is comparatively in its infant levels, it is expected that SL would progress towards the advanced technologies in upcoming years. Hence, there is a need for guidelines and regulations to be in place to avoid any potential risks that may arise from these technologies. Being signatory to the Cartagena Protocol, Sri Lanka developed the National Biosafety Framework and National Biosafety Policy in 2005. Subsequent to these developments, the current project, “Implementation of the National Biosafety Framework in accordance with the Cartagena Protocol on Biosafety”, known as the “National

Biosafety Project”, is now being implemented by the Ministry of Mahaweli Development and Environment (MoMDE) along with the Food & Agriculture Organization (FAO) of the United Nations, Sri Lanka.

The project consists of four components, of which, component 2 and a part of component 4 are technically supported by the NSF. This was initiated in March 2019. Component 2 focuses on formulating guidelines for risk assessment of GMOs, contained use of LMOs/ GMOs and feed & food safety. The component 4 aims at producing awareness materials on biotechnology & biosafety. Each component is guided by an international consultant, national consultants and working group members, who work as a team to achieve the objectives namely; formulating the guidelines, training manuals and

preparing awareness materials with the support and coordination of the NSF. The components are handled by groups of experts from various national institutes.

The NSF conducted technical meetings and workshops to formulate guidelines and prepared outreach materials for professionals. Currently, the draft guidelines are being finalized to be submitted to the MoMDE. More awareness material are being produced targeting at various groups.



Teams attending the preparation of Biosafety guidelines

Extending support to “Vidatha”

“Vidatha” Resource Centres (VRCs) were established by the then Ministry of Science & Technology as locations to play a role in transferring scientific knowledge and innovations of scientists to the Micro, Small and Medium Entrepreneurs (MSME) at grass root level. The Vidatha Programme was initiated in the year 2000 and it has now been branched out to 266 centres island wide.

In view of strengthening VRCs, Ministry of Science, Technology and Research, the predecessor to the Ministry of Higher Education, Technology and Innovation, launched a programme through institutions under the purview of the Ministry.

Bulathsinghala VRC is one such Centre assigned to the NSF.

Popularizing science among the general public is one of the mandates of the NSF.



“Open burning of plastics & polythene has become a regular practice of the village community. Therefore, I thought it is important to give the message of harmful effects of this practice to the village people through the community leaders”.

- Science & Technology Officer, Bulathsinghala VRC -

At the request of the VRC in Bulathsinghala, the NSF facilitated an Awareness Programme on “The Effect of use and recycling of polythene & plastics”. The programme was held on 29th November 2019 at the Divisional Secretariat. Leaders of village level societies and government officials took part in the event. Categorization of plastics, environmental impact of using polythene & plastics and disposal were the topics covered during the programme.

The Environmental Officer from Kalutara District Branch of the Central Environmental Authority and the NSF Technology Grant recipient, Mr Damith Nishantha were the resource persons. NSF awarded a technology grant to Mr Damith Nishantha of “Sanasuma” Recycling Centre, to make

a pelletizing and drying machine to enhance efficiency of polythene recycling process. With successful implementation of the machine, recycling capacity has been extended to cater to high volumes.

Increased awareness among the village community and new waste management practices inculcated in them were the social impact achieved out of the NSF support.

The National Policy Framework, “Vistas of Prosperity and Splendour”, is focused on 10 policies for the economic growth of the country. Out of the 10, the NSF has the capacity to address 3 policies directly. Accordingly, the areas under these three policies (People-centric Economy, Productive Citizen and a Happy Family and Technology-based Society) have been identified as priorities for consideration for providing financial support in 2020. The grant proposals/applications are invited immediately. Please refer to <http://www.nsf.gov.lk/index.php/component/content/article/849-calling-applications-for-the-nsf-grants-for-year-2020.html> and propose solutions for the development of the country.



Staff Update



Ms Nilusha Perera, the Graphic Designer of “Vidya” template who designed the Volume 20; issues No. 05 & 06 and Volume 21; issues No. 01 & 02.

“Vidya” Came out in a new look with Vol. 20; issue No 01 in 2018.



National Science Foundation
47/5, Maitland Place
Colombo 07
Sri Lanka

Tel : 011-2696771
Fax : 011-2694754
www.nsf.gov.lk



Vidya Newsletter Editorial Board

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Type Setting and Page Designing

Ms N. H. U. Chamathka Dias