

## Editor's Note



During the months of June to August 2011, several workshops and seminars were organised, new projects were launched, awards were conferred and new collaborations have been taking place. As you can imagine, there was quite a lot of work involved and it has been a beneficial period for all involved.

In this issue of Education News, we bring to you a sense of the evolution of the sector, work being done and achievements of Institutions falling under the aegis of the Ministry of Tertiary Education, Science, Research and Technology.

**Dr. Aansa Bedacee**  
**Editor**

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## **Journée Récréative' for children from CEDEM**

A fun day was organised on Thursday 16 June 2011 at the *Institut Supérieur de Technologie* for children from the 'Centre d'Éducation et de Développement de l'Enfant Mauricien (CEDEM)'.

This activity was organised and conducted by the 2<sup>nd</sup> year students from the 'Maintenance et Automatismes Industriels (MAI)' department as a partial requirement for their 'Management' module.

63 students aged between 7 and 20 years old were present and participated in the various activities such as: - educational and other games followed by lunch and gifts.

The CEDEM is a non-governmental organization (NGO) which looks after various categories of vulnerable children with a view to improve the quality of life of these children.

## **Collaboration for the establishment of a Scientific Park in Mauritius.**

On 11 July 2011, 6 high officials from the Chinese Ministry of Science and Technology came to Mauritius for 3 days to collaborate for the establishment of the scientific park in Mauritius with the aim to commercialise the research and development output in our country.

The Ministry of Science and Technology of China, renowned globally for the establishment and administration of scientific parks, operates around 84 scientific Hi-tech parks focusing on the following 3 objectives:

- (i) To promote the commercialisation of research and development output.
- (ii) To produce innovative products at large scale.
- (iii) To internationalise the Technology Industry.

The Chinese delegation has made the following proposals to the Mauritius Research Council:

- (i) The possibility for people working in Mauritian Research Institutions to follow a two- week programme in China on the establishment of scientific parks.
- (ii) The possibility for Mauritian scientists to follow training in specialised scientific park in China.
- (iii) The possibility for the transfer of the following Chinese Technology to Mauritius, namely:
  - (a) The culture of marine algae
  - (b) The study of medicinal properties of certain marine organisms and certain indigenous Mauritian plants.

## **WORKSHOP**

# **A COORDINATED RESEARCH PERSPECTIVE ON WATER RESOURCES IN MAURITIUS**

The Minister of Tertiary Education, Science, Research and Technology, Dr the Hon. Rajeshwar Jeetah, launched the National Water Research Group during a half-day workshop held on 20<sup>th</sup> June 2011 at the Mauritius Research Council (MRC). The workshop was organized with a view to address the problem of management and supply of water.

Mauritius is facing a serious water shortage due to the effects of climatic change and global warming. The Ministry of Tertiary Education, Science, Research and Technology ((MoTESRT) has hence deemed it important to set up, through the MRC, the National Water Research Group.



## **Purpose**

The National Water Research Group will act as a vehicle for the inputs from the Research Community regarding the water shortage issue and will focus mainly on:

- Identifying critical research issues on water resources for Mauritius
- Prioritizing research themes in water resources management
- Coordinating and facilitating research activities related to providing sustainable short-medium and long term solutions to the water shortage issue.

The Central Water Authority, Water Resources Unit, Waste Water Management Authority, Mauritius Meteorological Services, University of Mauritius, University of Technology, Mauritius, together with experts of the Research Alliance from several public and private institutions dealing with water resources also participated in the workshop.

## **BASIC COURSE ON WRITING SKILLS FOR RESEARCH JOURNALS**

Following the success of the first Edition of the Basic Course on writing skills for researchers held in November 2010, a Second Edition was organized on 18 July 2011.

The main objective of the course was to enhance the skills of young researchers including MPhil/PhD students to write in Research Journals and to increase the publication output of their research activities in peer-reviewed journals.

The Second Edition of the Basic Course on Writing Skills for Research Journal was officially launched by Dr the Hon. Rajeshwar Jeetah on 18<sup>th</sup> July 2011 at the Mauritius Research Council.

The course was designed and conducted by local resource persons from UoM and UTM. The two-day course was run in four batches based on the following three themes:

- 1) Science/Agriculture,
- 2) Engineering/ ICT, and
- 3) Social Science/Economics/Management.

There were around 80 participants from about 26 institutions (both public and private tertiary education institutions) who participated in the course which was held from 19<sup>th</sup> July to 27<sup>th</sup> July 2011 at the University of Mauritius, Reduit.

## **Launching Ceremony of Collaborative Mauritius (CM) Network - Innovation Partnership Programme**

On 29 July 2011, a launching ceremony was held at Bonâme Hall at the MSIRI whereby 8 institutions signed the Collaborative Mauritius (CM) Network MoU document and pledged to the CM Innovation Partnership Programme.

The CM Network is an initiative of the Mauritius Research Council (MRC) and is considered as a stepping stone in the process of consolidating a cross-institutional collaborative spirit among existing Mauritian institutions to enhance the local Innovation Eco-system and climate. Through these linkages the CM Network aims to be the open innovation platform/mechanism that will expedite the sharing of local knowledge and competencies for the establishment of collaborative partnerships towards the realisation of projects of Innovative intent.

The Collaborative Mauritius (CM) Network envisages being the meeting point for Innovative Mauritian minds from Academia, Research and Business sectors where original ideas, concepts and initiatives can be exchanged. The CM Network aims at enhancing triple helix interaction, bringing people from diverse organisations with different mandates together to stimulate Innovation, in the first instance, for commercial intent.

The following 8 institutions have committed, through the establishment of the CM Network, to nominate for training and deployment, dynamic ‘Connector’ figures: the Board of Investment (BOI), Fashion and Design Institute (FDI), Mauritius Chamber of Commerce and Industry (MCCI), Mauritius Research Council (MRC), Mauritius Sugar Industry Research Institute (MSIRI), Mauritius Standards Bureau (MSB), National Productivity and Competitiveness Council (NPCC), and the Tertiary Education Commission (TEC).



These individuals, have been ‘hand-picked’ from each of the CM Network partnering institutions, and have been selected to play a key role in contributing towards promoting all aspects of Innovation in each of the three phases of the overall Collaborative Mauritius Network Initiative namely (1) the Innovation Partners Programme, (2) the Innovation Access and Commercialisation Programme and, (3) the Innovation Awareness Programme.

## **ELECTRICITY GENERATION FROM COCONUT OIL AND WASTE VEGETABLE OIL**

In line with the Maurice Ile Durable Project, the Mauritius Research Council (MRC) in collaboration with Outer Islands Development Corporation (OIDC) initiated a project on the use of Coconut Oil and Waste Vegetable Oil as substitutes to diesel in transportation.

Phase I of this project, completed in 2009, constituted of a feasibility study and a pilot implementation carried out in Agalega and Mauritius whereby it was shown that Coconut Oil and Waste Vegetable Oil are very good substitutes to diesel for transportation. Currently, there is one tractor running on Coconut Oil in Agalega and some 4X4 vehicles in Mauritius on Waste Vegetable Oil.

The second phase, launched in September 2010, focused on the use of Coconut Oil and Waste Vegetable Oil in diesel generators to produce electricity. The study entailed the modification of the Central Water Authority's 60 kVA generator situated at Ebene Pumping Station to run on Coconut Oil, Waste Vegetable Oil and diesel.

The ultimate goal of this initiative is to reduce the dependency of Agalega on diesel and use locally produced Coconut Oil to generate their electricity. This study led by the MRC, was carried out in collaboration with CWA, University of Mauritius, Ministry of Public Infrastructure, NDU, Land and Shipping, Mauritius Standards Bureau and Auto Check Ltd. The OIIC, Ministry of Health and Quality of Life and Indian Oil (Mauritius) Ltd. sponsored the project through the provision of Coconut Oil, Waste Vegetable Oil and diesel respectively

The engine's performance while running on Coconut Oil, Waste Vegetable Oil or diesel was assessed through a number of parameters including:

- i. quantification of toxic gases like Carbon Monoxide and Nitrogen Oxide from the exhaust emissions
- ii. assessment of the opacity of the exhaust gases and evaluation of the engine wear & tear through lube oil analysis
- iii. evaluation of the effectiveness of Coconut Oil and Waste Vegetable Oil compared to diesel for electricity generation.

The results of the study were disseminated through a seminar which was officially opened by Dr the Hon. Rajeshwar Jeetah, Minister of Tertiary Education, Science, Research and Technology on Thursday, 4th August 2011 at the Mauritius Research Council.

## **SEMINAR ON WATER & ENERGY**

The Mauritius Research Council organised a half-day Seminar on Water and Energy in the Context of the International Council for Science (ICSU) Regional Committee for Africa Meeting on the 4th of August 2011. Dr the Hon. Rajeshwar Jeetah, Minister of Tertiary Education, Science, Research and Technology, was present for the event.

Water and Energy are two of the five research areas being coordinated by the Council. Two eminent scientists, forming part of the ICSU Regional Committee, gave key note addresses on the occasion. They are: Prof Emeritus Uri Shamir, Member of ICSU Executive Board and its Regional Committee for Africa and Senior Consultant to the Israeli Water and Sewage Authority who talked about **Water Management in a Changing World** and Prof Hilary I. Inyang, Duke Energy Distinguished Professor of Environmental Engineering and Science, President of the International Society for Environmental Geotechnology and the Global Alliance for Disaster Reduction who talked about **Impacts of Energy Production and Utilization Systems on the Environment**.

The seminar also included the participation of DIREKT, the Small Developing Island Renewable Energy Knowledge and Technology Transfer Network which focuses on the issue of renewable energy, of great relevance for the socio-economic development of the ACP small island developing states.

## **SEMINAR ON HEART & DIABETES**

On 10 August 2011, The Mauritius Research Council organised a seminar on the following subjects:

1. Contribution of the Positional candidate gene *OXR1* to premature coronary heart disease and Type 2 Diabetes in the Mauritian Population
2. Interaction between *PON1* Gln192Arg Polymorphism and Type 2 Diabetes in Indo-Mauritian agricultural workers exposed to herbicides

### **Contribution of the Positional candidate gene *OXR1* to premature coronary heart disease and Type 2 Diabetes in the Mauritian Population**

Considering the fact that the burden of disease due to type 2 diabetes (T2D) and coronary heart disease (CHD) is important in Mauritius and is not likely to decrease, a study was carried out with the aim to investigating the contribution of variants in the positional candidate gene *OXR1* to susceptibility to premature coronary heart disease and/or to Type 2 diabetes in the Mauritian population. Like most common chronic diseases, T2D and CHD are multifactorial, having both environmental and genetic components contributing to their pathophysiology. Genetic variations in human beings probably contribute to their susceptibility to T2D, or CHD, and to the severity of these diseases. A genome-wide scan was carried out in 1999 involving Mauritian families of North-Indian origin affected by CHD and/or T2D. This study unveiled several chromosomal regions harbouring positional candidate genes for these complex traits, including chromosomal 8q23 region where microsatellite markers were found to co-segregate with premature CHD, T2D and HBP. The strongest potential candidate gene within the 8q23 chromosomal region appeared to be the *Oxidation Resistance 1 (OXR1)* gene, given the increasing role attributed to oxidative stress in the pathophysiology of T2D and CHD, the role of mitochondrial metabolism in oxidative stress and the protective role of *Oxr1* protein against oxidative damage when localized in the mitochondria.

## **Interaction between PON1 Gln192Arg Polymorphism and Type 2 Diabetes in Indo-Mauritian agricultural workers exposed to herbicides**

Type 2 diabetes (T2D) is a metabolic disorder of multifactorial etiology where age, genetic factors and environment play a role. Human serum paraoxonase (PON1) is an enzyme located on high-density lipoprotein (HDL) that is involved in preventing peroxidation of low-density lipoprotein and in detoxification of organophosphate (OP) pesticides or herbicides. A previous cross-sectional study undertaken in 73 agricultural workers exposed to insecticides had shown a borderline association between the PON1 Gln192Arg polymorphism and T2D in this occupational group,  $p=0.05$ . A study was carried out to confirm association between the same polymorphism and T2D in agricultural workers exposed to herbicides.

## **“Potted Plants in Greenhouses”: A Critical Reflection on the Resilience of Colonial Education in Africa**

The Communication Studies Unit of the Faculty of Social Studies and Humanities of the University of Mauritius invited Professor Francis B. Nyamnjoh, external examiner at the unit since two years, for a talk on 20 June 2011. Francis B. Nyamnjoh, Professor of Social Anthropology at the University of Cape Town in South Africa, is a prolific writer of both research papers and novels focusing on African identity.

His talk drew on Okot p'Bitek's Song of Lawino and other critical voices arguing that education in Africa is victim of a colonial and colonising epistemology, which takes the form of science as ideology and hegemony. Postcolonial African elite justifies the resilience of this epistemology and the education it inspires with rhetoric on the need to be competitive internationally. The outcome is often a devaluation of African creativity, agency and value systems, and an internalised sense of inadequacy. Education has become a compulsion for Africans to “lighten their darkness” both physically and metaphorically. Prof. Nyamnjoh calls for paying more attention to popular systems of knowledge, in which reality is larger than logic. He also calls for listening to ordinary Africans who, like p'Bitek's Lawino, are challenging the prescriptive gaze and grip of emasculated elite.

## Conferment of Honoris Causa upon eminent personalities at the University of Mauritius



- Ceremony of Conferment of the Degree of Doctor of Civil Law honoris causa upon **Her Excellency Smt Pratibha Devisingh Patil**, President of the Republic of India, on Thursday 28 April 2011.



- Ceremony of Conferment of the Degree of Doctor of Civil Law honoris causa upon **His Excellency Mr S R Nathan**, President of the Republic of Singapore, on Tuesday 07 June 2011



- Ceremony of Conferment of the Degree of Doctor of Civil Law honoris causa upon **Professor Robert Louis Garron**, Professeur Honoraire, Université Paul Cézanne (Aix Marseilles III) on Wednesday 29 June 2011 followed by a talk delivered by Prof Garron on “Le Code de Commerce et le Droit des Activités Commerciales”

## **Workshop on “Quantum fields and Cosmological inflation”**

The University of Mauritius (Department of Physics, Faculty of Science), UoM Theoretical Physics Group, and the National Institute of Theoretical Physics, Stellenbosch, South Africa organised a workshop on Quantum fields and Cosmological inflation from 6 to 17 June 2011. The workshop consisted of 6 lectures, together with problem solving sessions and two public talks delivered by Prof. Robert De Mello Koch and Dr Sanjaye Ramgoolam.

The first talk on “From Space-time and Quantum Mechanics to String Theory” was given by Prof. Robert De Mello Koch, *DST/NRF Research Chair in Fundamental Physics and String Theory at the School of Physics, University of the Witwatersrand, South Africa*. He highlighted how gravitational force is replaced by a curving of space-time in Einstein's theory of General Relativity. The three microscopic forces arise from force-carrying particles in Quantum Field Theory. He also stressed that a unified description of nature requires a synthesis of General Relativity and Quantum Field Theory and discussed the difficulties in achieving this unification. He eventually went through a description of the String Theory.

Dr Sanjaye Ramgoolam, *Reader in Theoretical Physics, Center for Research in String Theory, Physics Department, Queen Mary College, University of London*, further elaborated on the String Theory through a second public talk on the “Symmetries and Extra Dimensions in String Theory”. Dr Ramgoolam explained the meaning of extra dimensions of space in string theory and how they may lead to new symmetries of physics.

## **Faculty Communication Seminar Series and PR Event at FLM**

The 9<sup>th</sup> of June 2011 marked the beginning of a series of Faculty Communication Seminars organized by the Faculty of Law and Management (FLM). For the launching of the event, were present the Minister of Tertiary Education, Science, Research and Technology, Dr.the Hon. Rajeshwar Jeetah, the Vice-Chancellor, Professor Konrad Morgan, and other eminent guests from the Industrial sector. The Faculty Communication Seminars were programmed over four days and a PR Event was organized to mark the end of this wonderful experience.

The main purpose of the whole event was to strengthen communication at faculty, university and industry level. All academics in each of the three departments of the FLM as well as the support staff had the possibility to express themselves; talking about their qualifications, duties and their aspirations in view of offering a better output to the FLM and University.

The Honourable Minister, Dr Jeetah, and the VC, Prof Morgan, conveyed words of encouragement to the Faculty and the Minister gave an apercu of the forthcoming plans of his Ministry. He also suggested that the Faculty could consider avenues of collaboration with foreign universities like India and could thus offer courses from these renowned universities. The Minister emphasized the need for communication between the faculty and the industry,

in particular for the dissemination of both the research work carried out by academics and of students' dissertations.

Guest speakers described the whole event as being very laudable and also stressed on the importance of reinforcing the link between academia and industry; the main objectives of such a link being to offer students information on the actual requirements of the industry, conduct research that would be relevant and valuable for the industry and the country. Mr. James Benoit, CEO of AfrAsia Bank Limited and President of Society of Financial Analysts Mauritius added that, *“This kind of industry outreach effort by FLM is a great part of that development. I think we can develop many more areas as research and investment competitions, joint efforts on policy making for regulations, incentives and ethics in the country and for training and development.”*

The end of the Seminar Series was done in a grand way through a PR Event in the presence of the Honourable Minister, Dr. Jeetah, the VC, Prof Morgan, and other key guests from industry and the legal profession. The whole event has proved that it is very important for academia to bridge links with the industry. The other main outcome from the event is the sense of belonging and sharing that the event has created within the FLM community!

## Web Design Competition 2011

### “Attracting International Students to Mauritius”



### 1<sup>st</sup> year student wins the Web Design Competition 2011

The Web Design Competition launched on 31 January 2021 was a joint initiative of the University of Mauritius and the Tertiary Education Commission under the aegis of the Ministry of Tertiary Education, Science, Research and Technology.

The objective of this competition was to create a showcase website for attracting international students in Mauritius, which could eventually be used by the Ministry or the University. Opened to all registered UoM students, 17 students initially showed their interest for this competition, out of which 5 students, from the Faculty of Engineering, submitted their websites. The members of the jury panel evaluated the websites based on the following criteria: content and relevance, website structure, appearance and function, user friendliness, writing and organization, and originality.

On 23 August 2011 an Award ceremony was held at the University in the presence of Dr the Hon. Rajeshwar Jeetah, Minister of Tertiary Education, Science, Research and Technology Prizes were awarded to the following winners and participants of the Web Design Competition 2011:



**Kanni Kirupagaren (1<sup>st</sup> prize winner)**

1<sup>st</sup> prize winner: **Kanni Kirupagaren, BSc (Hons) Computer Applications, Year 1**  
2nd prize winner: **Pagooh Doosan, BEng Electrical and Electronic Engineering, Year 3**  
Participants: **Beegun Ajmir, BSc (Hons) Information Systems, Year 1**  
**Moossajee Bibi Sadiyah, BSc (Hons) Computer Science, Year 1**  
**Ramguttee Teelock San, Diploma Web Technologies and Mauritius**