SPCS/BH/370089

RMIT UNIVERSITY

Office of the Deputy Vice Chancellor
College of Science, Engineering and Health (STEM college)

Tel. +61 3 9925 2182
Mobile: 0410473847
sujeeva.setunge@rmit.edu.au

Addl S(Edu)
SAS
P.S. Speaker

24/01/2022

His Excellency Gotabaya Rajapaksa,
The President of Democratic Socialist Republic of Sri Lanka

Dear Hon. President,

Current Collaborations between Royal Melbourne Institute of Technology (RMIT University), the local Universities and other State and Private Organisations in Sri Lanka

It is an honour for us to meet your private secretary and present our current activities to support the development of our motherland. This document summarises some of our collaborations which are directly aligned to your vision for future of education and digital transformation in Sri Lanka.

Joint Ph.D program between four state Universities in Sri Lanka and RMIT University

In 2018, a joint Ph.D program commenced between RMIT University and

- University of Pradeniya (UoP)
- University of Moratuwa (UoM)

The program was implemented in 2020/2021 at

- University of Ruhuna (UoR) and
- University of Sri Jayawardenapura (SJP).

The program received significant investment from RMIT University with a full fee waiver for the students and support for a living allowance when the student is in Melbourne for a period of 6 months to 1 year. The topics for Ph.D are selected to cover the areas of strategic importance for Sri Lanka and the current students are progressing very well. After the initial exploration with a small cohort, RMIT University is now expanding the program with the aim of increasing the intake to this program. The students are jointly supervised by RMIT academics and Sri Lankan academics. For a number of projects, sponsorship of local industry has been obtained. We currently have 33 candidates in the program.

The major constraint for expanding the program is the inability of the Sri Lankan Universities to provide a living allowance for the candidates while they are in Sri Lanka. This is typically around Rs. 75,000 per month with a maximum total cost of Rs. 2 million per candidate. Currently this cost is covered by multiple avenues: RMIT supervisors' industry grants (~Rs.15 million), Sri Lankan supervisors research grants, and Sri Lankan industry sponsorships (~Rs. 10 million).

There is a demand for the program and the expansion can offer significant benefits to Sri Lankan Universities through increasing the world rankings of the Sri Lankan state Universities via publications and citations, providing access to world class research facilities to Sri Lankan Ph.D candidates and delivering knowledge and innovation for the benefit of the Sri Lankan community.

Specific current projects and partnerships under the joint Ph.D program

Environmental Pollution & Waste

1. Landfill leachate treatment using enhanced membrane bioreactor
2. Biochar based functional concrete for urban runoff
3. Removal of polycyclic aromatic hydrocarbon from stormwater runoff

Natural hazards & Disaster Resilience

1. Impact of natural hazards on cascades of dams in Mahaweli river basin
2. Risk assessment of cascade dam failures due to Natural Hazards
3. Risk-Based Life Cycle Assessment Tool for Disaster Resilient Critical Infrastructure in Sri Lanka
4. Geotechnical risk assessment of landslides on natural slopes in sri Lanka
5. Current level of preparedness and response capacities of coastal communities and commercial establishments for tsunami in sri Lanka
6. Mathematical model for buildings to take decisions when incorporating disaster resilience and sustainability

Sustainable Materials

1. Fly ash-rice husk ash blended alkali activated bricks
2. Geopolymer based soil stabilization for expansive road subgrades
3. Sustainable Concrete incorporated with Recycled HDPE Plastics
4. Sustainable criterion selection framework for green construction materials
5. Design optimisation of axisymmetric silos with infill bulk material
6. High performance high durable concrete for chloride exposure
7. Fabric-Reinforced Cementitious Matrices at elevated temperature
8. Roof tiling waste in value added constructions
9. Concrete incorporating novel manufactured sand
10. Recycled PET fibers in Cement Composites

Predictive Modelling & Asset Management

1. Prioritization model for road pavement maintenance prediction considering cross assets
2. Optimum Data Collection for Structural Integrity Management of Railway Infrastructure
3. Structural Corrosion Detection by High-resolution Image Processing using Deep Learning
4. A reliability based approach for predicting degradation of building assets
5. BIM to Construction Projects using mixed research methods

Advanced Manufacturing

1. Modular construction and 3D printing in modern constructions
2. Aerated Geopolymer on Prefabricated Modular Construction
3. Glass Recycling Technology for sustainable Civil Engineering Applications
4. Machine learning for Geopolymer mix design
5. Fire safety of materials used in Modular Structures
6. Structural integrity of prefabricated volumetric modular building system
7. Load Transfer Mechanism of Piled-Raft Foundation in Buildings
8. Waste Tire Rubber and Waste Tire Steel Fibre in Concrete Members

Current industry sponsorships for the program

- Tokyo Cement – University of Peradeniya
- Hasthi Cement – University of Peradeniya
- Rhino Roofing Products Limited – University of Peradeniya
- Sanken Construction (Pvt) Ltd – University of Peradeniya
- INSEE Cement – University of Moratuwa
- Asian Disaster Preparedness centre (ADPC) – University of Moratuwa
- National Building Research Organisation (NBRO) – University of Moratuwa

- Bureau Environmental Lanka (Pvt) Ltd – University of Ruhuna

Digital transformation of local authorities

In 2019, RMIT University received funding from the Asian Development bank to implement an infrastructure asset management platform developed by RMIT Engineering in the Ministry of local government in Sri Lanka. The cloud hosted asset management platform entitled CAMS was developed at RMIT with a $3 million investment from Australian research grants which enables digital capturing of all infrastructure assets at a granular detail and predict the future maintenance costs for optimised management saving significant resources for the local authorities. We have created a major digital transformation of the management of infrastructure assets of Sri Lanka by implementing the cloud hosted CAMS platform in seven local councils in Sri Lanka as a pilot. Recent report by the ADB mission recommended that the system should be implemented in all local authorities. Some government support could fast track this activity.

Implementing outcomes of RMIT research in Sri Lanka with funding from external sources

A project funded by the Horizon 2020 program of EU includes benefits to Sri Lankan Rail under an RMIT led project developing a Rail asset management system. Further, a grant under the ERASMUS program of European Union titled " Enrichment delivered through the Application of Location-based Curricula Services to Intelligent Transport Systems / LBS2ITS led by Professor Allison Kealy of RMIT will develop courses on areas of Geospatial to be taught at 4 Universities in Sri Lanka.

There are many other informal collaborations delivering significant value to Sri Lankan research culture through engagement of RMIT academics. One such example is the development of an earthquake map for Sri Lanka by Dr. Sri Venkatesan and Professor Ranjith Dissanayake which addressed a major gap in design of structures for dynamic loads in Sri Lanka, won an award from the Sri Lankan Institution of Engineers.

Potential opportunities for further collaboration through Education partnerships

In 2019, subsequent to the Sri Lankan cabinet approval for enabling establishment of Foreign In-Country Education opportunities in Sri Lanka in collaboration with overseas institutions, RMIT University has received several requests from private providers for joint ventures in Sri Lanka. In exploring this further Prof. Setunge from RMIT University communicated with Professor Amaratunge, the chairman of the UGC of Sri Lanka to ascertain the support available to RMIT University if a decision is made to have significant RMIT presence in Sri Lanka. These conversations are currently in progress.

Your endorsement and support could provide us with many opportunities to harness the skills of expatriate academics from Australian institutions. I would be very happy to provide details of any of the above.

Yours Sincerely,

S. D. Setunge

Prof Sujeeva Setunge
Associate Deputy Vice Chancellor, Research and Innovation
STEM College

Appendix: RMIT standing in the major ranking schemas

QS Ranking

- 206th globally in QS World University Rankings 2022. Rankings published for 1,380 institutions.
- 74th globally in QS Graduate Employability Rankings 2022. RMIT ranks 1st in Australia, 18th in Asia Pacific and 43rd globally on the Graduate Employment Rate. RMIT also ranks 61st globally and 13th in Asia Pacific on Partnership with Employers. A ranking of which are the best universities at engaging with employers.

Academic Ranking of World Universities (ARWU)

- 351st globally in the 2021 Academic Ranking of World Universities.

Times Higher Education (THE)

- 3rd globally in the 2021 Times Higher Education Impact Rankings. RMIT ranks 2nd globally in reducing inequalities, 3rd in partnership for the goals. This ranking focuses on measuring universities' social, environmental and economic impact and progress towards the United Nations' Sustainable Development Goals (SDGs)
- 301-350 (band) in the 2022 edition of Times Higher Education World University Rankings. RMIT ranks 59th globally on international outlook. THE publishes rankings for 1,622 universities.

Best Global Universities

- 244th globally in Best Global Universities 2022. A ranking of the world's top 1,750 universities, published by U.S. News & World Report. RMIT ranks 219th globally on the global research reputation dimension. This is a ranking which heavily relies on bibliometrics and a reputation survey.

In specific subject areas in Engineering and technology RMIT is ranked within top 100 in the world.
Example QS rankings:
Computer science and IS, Engineering Electrical and Electronics: **top 150 in the world**
Engineering: Civil structural, Telecommunication, Mechanical: **Top 100 in the world**

Ref. https://www.rmit.edu.au/about/facts-figures/reputation-and-rankings