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RESEARCH@

2025

URC E-NEWSLETTER

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University of Peradeniya

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Multidisciplinary Grant Scheme
University Research Council

Grant 127: Applications of White Light Images and Artificial Intelligence for the Early Detection of Oral Cancer in Sri Lanka

Research Team from University of Peradeniya

	Prof RD Jayasinghe Chair Professor of Oral Medicine and Periodontology
	Prof. Roshan Ragel Department of Computer Engineering, Faculty of Engineering
	Dr. Isuru Nwinne Department of Computer Engineering, Faculty of Engineering
	Dr. Nadisha Piyarathne Centre for Research in Oral Cancer, Faculty of Dental Sciences
	Dr. Sumudu Rasnayaka Department of Prosthetic Dentistry, Faculty of Denta Sciences

Narrative Abstract

Background: Oral cancer is a significant global health concern, specifically in Sri Lanka where it is the most common cancer in the male population.

Aim: This project aimed to address the delay in oral cancer diagnosis using Artificial Intelligence technology.

Methodology: The project was executed in three phases.
Phase 1: Preparation of the MOU between CRMY and UoP, obtaining and hosting the MeMoSA software at UoP, introduction of the software to Dental surgeons and conducting a feasibility study for pilot testing.
Phase 2: Development of a comprehensive database of patient details and images of the oral cavity.
Phase 3: Training an Artificial Intelligence model for automatic classification of oral pre-cancer lesions using multimodal data.

Outcome: The project yielded two abstracts, two full papers in peer reviewed indexed journals (Q1), one newspaper article in national newspaper and one national level award.

Achievements:

- National ICT Awards (NBQSA) in 2023, the bronze award in the tertiary student project (Technology) category was awarded for the custom annotation tool, and the multimodal classification model.
- The project represented the University of Peradeniya, Faculty of Engineering at the Techno 2023 exhibition at which the University stall was presented the gold award for the best display of engineering projects.

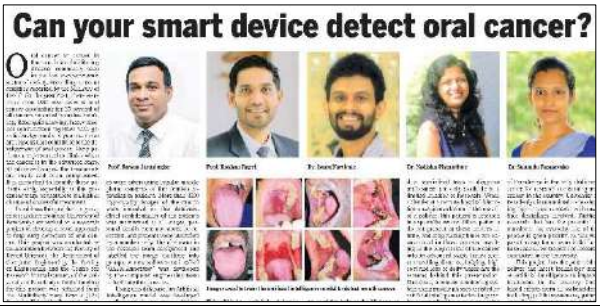
Publications (Full papers):

- Piyarathne NS*, *et al.*, 'A Comprehensive Dataset of Annotated Oral Cavity Images for Diagnosis of Oral Cancer and Oral Potentially Malignant Disorders'. Oral Oncology, 2024. 156, doi: 10.1016/j.oraloncology.2024.106946 (Impact factor – 4.0, 2023).
- Devindi G.A.I *et al.*, "Multimodal Deep Convolutional Neural Network Pipeline for AI-Assisted Early Detection of Oral Cancer," in *IEEE Access*, vol. 12, pp. 124375-124390, 2024, doi: 10.1109/ACCESS.2024.3454338. (Impact factor – 3.4, 2024).

Publications (Abstracts):

- Jayasinghe J. et al., A feasibility study on the use of MeMoSA® software by the Dental surgeons in Kandy district, Sri Lanka. iPURSE 2023
- Liyanage S. et al., Database of Annotated White Light Images for Oral Cancer Detection: Leveraging OASIS-Annotator, a Web-Based Tool for Image Annotation. iPURSE 2023

Publications (Sunday Observer 15.09.2024):


Can your smart device detect oral cancer?

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

Grant 136: Microbes as Bio-larvicides and Fitness Indicators of Dengue Vector Mosquitoes in Sri Lanka

Research Team from the University of Peradeniya

Picture of the PI 	Prof. W.A. Priyanka P. de Silva Department of Zoology, Faculty of Science, University of Peradeniya
Picture of the Co-I 	Prof. F. Noordeen Department of Microbiology, Faculty of Medicine, University of Peradeniya.
Picture of the Co-2 	Dr. T.C Weeraratne Department of Zoology Faculty of Science, University of Peradeniya
Picture of the Co-3 	Prof. Ruchika Fernando, Department of Veterinary Public Health & Pharmacology, Faculty of Veterinary Medicine & Animal Science, University of Peradeniya

Narrative Abstract

Background: Sri Lanka urgently requires efficient mosquito control strategies due to its high annual incidence of cases. With conventional mosquito control programs proving limited, focus has shifted to symbiotic microbes as a promising alternative.

Aim: Our objective was to assess natural microbial interventions aimed at disrupting mosquito populations, specifically targeting *Aedes aegypti* and *Aedes albopictus*, the primary and secondary vectors of dengue.

Methodology: Microbial communities were characterized across various geographic and environmental settings, with samples collected from 178 breeding sites. Approximately 20 bacterial strains were identified through morphological and molecular diagnosis, including notable genera such as *Pseudomonas*, *Enterobacter*, *Serratia*, *Citrobacter*, and *Rhizobium*.

Outcome: Significant impacts on *Aedes* larvae growth and development were observed with ten identified bacterial strains. These microbes influenced not only egg hatchability but also the entire lifecycle of *Aedes* mosquitoes. Notably, a larvicidal *Pseudomonas* species was isolated, marking a significant advancement in mosquito control. Additionally, two bacterial strains demonstrated the ability for transovarial transformation. *Serratia* species, recognized for their exceptional capacity to antagonize the dengue virus, were also isolated. These findings offer immense potential for developing targeted interventions to reduce dengue transmission.

Achievements:

Training and Capacity Building: Trained one M.Phil student and three undergraduate students.
Scientific Contributions: Produced two full research publications in peer-reviewed journals and presented findings in three abstract publications. **Laboratory Development:** Established or significantly advanced a laboratory for mosquito microbiome research
Novel Scientific Discoveries: Characterized microbial communities from 178 mosquito breeding sites. Identified bacterial strains with substantial larvicidal effects on *Aedes aegypti* and *Aedes albopictus*, including their impacts on egg hatchability and lifecycle progression.

Publications (Full papers):

W.M.S.H. Wijesundara, et. al. (2024). Bacterial Larvicides: Local strain of *Pseudomonas mosselii* as a natural larvicide against Dengue Vector Mosquitoes in Sri Lanka. Archives of Microbiology (Under review)

W.M.S.H. Wijesundara, et.al. (2024). Revealing Microbial Diversity: Insights from Dengue Vector Breeding Sites in Sri Lanka is completed and will be submitted to Applied and Environmental Microbiology by the end of December 2024.

Publications (Other):

- W.M.S.H. Wijesundara, T.C. Weeraratne and W.A.P.P. de Silva (2024). Larvicidal effect of Pseudomonas mosselii against larvae of dengue vector mosquito Aedes aegypti. iPURSE 2024.
- W.M.S.H. Wijesundara, K.P.W.C. Kavindi, T.C. Weeraratne and W.A.P.P. de Silva (2024). Characterization of bacterial isolates from breeding water of the dengue vector mosquito, Aedes albopictus. PGIS-RESCON 2024.
- W.M.S.H. Wijesundara, B.V.D.S. Baddevithana, T.C. Weeraratne and W.A.P.P. de Silva, (2023). Effect of physicochemical parameters on fitness of dengue vector mosquitoes. PGIS-RESCON 2023

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

Grant 180 - Design and Implementation of Microenvironment Conditions for Tea and Ornamental Foliage Plants using Precision Agriculture Systems Powered by Solar Photovoltaics

Research Team

	Prof. Janaki Mohotti Department of Crop Science Faculty of Agriculture, University of Peradeniya
	Prof. J. Ekanayaka Department of Electrical and Electronic Engineering, University of Peradeniya
	Prof. L. Samaranayaka Dean Faculty of Engineering, University of Peradeniya
	Prof. C. K. Beneragama Department of Crop Science Faculty of Agriculture, University of Peradeniya
	Dr. H. M. P. C. Kumarihami Department of Crop Science Faculty of Agriculture, University of Peradeniya
	Dr. K. M. Mohotti Former Director, Tea Research Institute of Sri Lanka
	Dr. S. A. Weerasooriya Department of Agricultural Economics and Business Management, Faculty of Agriculture, University of Peradeniya
	Prof. L. Suriyagoda Department of Crop Science Faculty of Agriculture, University of Peradeniya

Background: Use of agri-photovoltaic (APV) systems maximizes the land utilization efficiency by generating sustainable energy and by growing crops under the solar panels in the same land area. Tea and foliage plants have the potential to be grown under APV systems.

Aim: This project aimed to design and evaluate an APV canopy integrated with a closed-loop LED system suitable for growing high quality tea and ornamental foliage nursery plants in a shorter duration.

Methodology: The project was executed in three phases.

1. Design and Implementation of the LED and Precision Agriculture systems powered by Solar PV.
2. A climate-smart production system for tea and ornamental foliage plants using precision agriculture principles and a Nature-based solution.
3. Evaluation of the environmental and economic benefits of the climate-smart production system for tea and ornamental foliage plants.

Outcome:

The concept APV in tea and foliage plant production systems has not been utilized locally and elsewhere. The project yielded two full-length papers published in a National Conference. Another two full-length papers are in preparation to be submitted for scientific journals within this month.

Achievements:

- As part of our project, a key product was the development of a prototype of the APV (Agricultural Photovoltaic) system. This prototype was exhibited at various events such as iPURSE, Science Day event at Dharmaraja College, Kandy, to increase awareness, inspire interest, and gather feedback from different community sectors, including academia, industry, and the general public.

Publications (Full papers in Conference Proceedings):

- Sooriyabandara R.M.U.M., Indramali O S, Mohotti K M, Kumarihami H.M.P.C., Weerasuriya S A, Suriyagoda L.D.B., Beneragama C.K., Mohotti A.J., Samaranayake L. and Ekanayake J.B. (2023). Implementation of Color Combination Controlling in Agri-voltaic Grow Light. In: Proceedings of the National Symposium on Tea 2023, held on 7th December 2023, Thalawathugoda, Sri Lanka. The Tea Research Institute of Sri Lanka. 160-169.
- Indramali O.S., Sooriyabandara R.M.U.M., Kumarihami H.M.P.C., Mohotti K.M., Weerasuriya S.A., Samaranayake L., Ekanayake J.B., Suriyagoda L.D.B., Beneragama C.K. and Mohotti A.J. (2023). Environmental Variations in a Nursery and their Impact on Photosynthesis of Tea Plants. In: Proceedings of the National Symposium on Tea 2023, held on 7th December 2023, Thalawathugoda, Sri Lanka. The Tea Research Institute of Sri Lanka. 151-159.

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

Grant 199: Predicting the incidence of subclinical mastitis in dairy cows using machine learning techniques

Research Team from the University of Peradeniya

	Dr. R.M.S.B.K. Ranasinghe Department of Basic Veterinary Sciences Faculty of Veterinary Medicine and Animal Science
	Dr. Damayanthi Herath Department of Computer Engineering Faculty of Engineering
	Prof. C.K. Walgampaya Department of Engineering Mathematics Faculty of Engineering
	R.M.C. Deshapriya Department of Animal science, Faculty of Agriculture
	K.M. Devindi Department of Animal science, Faculty of Agriculture

Narrative Abstract

Background: Subclinical mastitis (SCM) is an economically important disease of lactating cows with a significant effect on the quantity and quality of milk produced. Therefore, early diagnosis of diseased cows is essential to minimize economic losses.

Aim: This study aims to develop a model using machine learning (ML) techniques for the detection of SCM and integrate it with a user-friendly software tool.

Methodology: Milk samples were collected from over 2400 cows and those were tested for milk quality and somatic cell count. ML modeling included data preparation, Exploratory Data Analysis (EDA), model training, and model selection. The most effective model was integrated with a user-friendly software tool with features like batch data input, secure data handling, and easy-to-read visual reports.

Outcome: The project yielded four abstracts, two newspaper articles, one newsletter article and a software tool. A journal article is being prepared.

Achievements:

- Generation of a database of 2400 cows with milk production, milk composition and somatic cell count data
- Developed a software tool to predict the incidence of SCM, helping farmers make better decisions for their cows' health ultimately improving herd health and productivity

Publications (Abstracts):

1. Wickramasinghe, et. al., Association between somatic cell count and physicochemical and compositional characteristics of raw milk of primiparous Jersey Friesian crossed dairy cows. UReS 2023, FLFN, WUSL.
2. Walgampaya, et. al., Supervised Learning for Subclinical Mastitis Prediction in Dairy Cows. PURES 2023.
3. Devindi, et. al., Determination of a threshold somatic cell count for identification of subclinical mastitis in dairy cows based on the CMT Score. iPURSE 2023.
4. Herath et. al., Predicting the incidence of subclinical mastitis in dairy cows using machine learning techniques.

Publications (Newspaper):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AI breakthrough for early detection of mastitis in dairy cows

AI breakthrough for...

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

A Wearable Device for Real-Time Monitoring of Biophysiological Signals in Pregnant Women, Athletes, and Other Individuals

Research Team from the University of Peradeniya

	Prof. M.P.B. Ekanayake Department of Electrical and Electronic Engineering, Faculty of Engineering
	Prof. G.M.R.I. Godaliyadda Department of Electrical and Electronic Engineering, Faculty of Engineering
	Dr. C. Ratnayake Department of Obstetrics & Gynaecology, Faculty of Medicine Peradeniya
	Prof. J. Wijayakulasooriya Department of Electrical and Electronic Engineering, Faculty of Engineering
	Prof. H.M.V.R. Herath Department of Electrical and Electronic Engineering, Faculty of Engineering

Narrative Abstract

Background: The growing demand for non-invasive, wearable systems to monitor bio-physical signals in non-clinical environments highlights a critical gap in continuous, long-term health monitoring.

Aim: To design a wearable device for the prolonged measurement and monitoring of Biophysiological signals—including limb movements, hand movements, respiration patterns, uterine contractions, and fetal movements.

Methodology:

- Independent sensor subsystems connect to a central supervisory control unit (CSCU) for flexible, user-specific configurations.
- IMUs and EMG sensors measure movements and muscle activity, placed strategically on the body for accurate Biophysiological readings.
- The CSCU coordinates sensor data collection, with local storage for further analysis using pattern recognition algorithms.

Outcome: The project yielded two journal papers (under review), two peer-reviewed conference papers, and two devices (one with a patent application)

Achievements:

- Best Paper Award for the paper " Quality Assessment of Welding using Regression Analysis of Biomechanical Data " in the Technology Management track at the Moratuwa Engineering Research Conference (MERCon) 2024
- The project represented the University of Peradeniya, Faculty of Engineering at the Techno 2023 exhibition at which the University stall was presented the gold award for the best display of engineering projects.

Publications (Full papers):

- M. Pandukabhaya et al., "Quality Assessment of Welding using Regression Analysis of Biomechanical Data," 2024 Moratuwa Engineering Research Conference (MERCon), Moratuwa, Sri Lanka, 2024, pp. 376-381, doi: 10.1109/MERCon63886.2024.10689188.
- L. B. I. P. Thilakasiri et al., "Fetal Movement Identification Using Spectrograms with Attention Aided Models and Identifying a Set of Correlating Parameters with Gestational Age," 2023 IEEE 17th International Conference on Industrial and Information Systems (ICIIS), Peradeniya, Sri Lanka, 2023, pp. 227-232, doi: 10.1109/ICIIS58898.2023.10253579.
- Wijethunga, Sahan, et al. "IMU-based Modularized Wearable Device for Human Motion Classification." *arXiv preprint arXiv:2303.16468* (2023).
- Alwis, Praditha, et al. “Application of an LSTM-Based Channel Attention and Classification Mechanism in Fetal Movement Monitoring”, doi:10.36227/techrxiv.24630642.v3.

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

Grant 263: Morphological, Biochemical and Molecular Characterization of Nutmeg (*Myristica fragrans* Houtt.) Germplasm in Sri Lanka

Research Team from the University of Peradeniya

Dr. Dimanthi Jayatilake
Faculty of Agriculture, University of Peradeniya

Prof. Anoma Perera
Faculty of Science, University of Peradeniya

Ms. Thamali Kariyawasam
Faculty of Agriculture, University of Peradeniya

Ms. Pradeepa Hettiarachchi
Faculty of Technology, Southeastern University of Sri Lanka

Dr. Isuri Jayawardena
Faculty of Agriculture, Rajarata University of Sri Lanka

Mr. Harsha Dissanayake
Department of Export Agriculture

Narrative Abstract

Background: Nutmeg (*Myristica fragrans* Houtt.) is a spice plant found in Kandy, Matale and Kegalle districts of Sri Lanka and is a high-price fetching commodity in the export market.

Aim: The study systematically characterised Sri Lankan nutmeg germplasm through morphological, biochemical, and genetic analyses.

Methodology: Diversity among 97 nutmeg trees was assessed based on 25 morphological traits, 6 SSR markers and biochemical profiling was conducted using a GC-MS analysis of oil, proximate analysis and assessment of antioxidant activity

Outcome: The morphological and molecular assessment revealed diversity in Sri Lankan nutmeg germplasm, however, reported a shallow divergence. Several elite trees carrying best mace and kernel characteristics were identified for conservation and for crop improvement purposes. Species distribution modelling identified new areas in the Kurunegala and Nuwara Eliya districts to promote nutmeg cultivation. The biochemical profile of Sri Lankan nutmeg was developed. For distinguishing sex in nutmeg plants, the recommended marker *OPE-11* was found not to be diagnostic. No significant differences were observed between sexes in leaf morphology. Work explored the potential of pericarp extracts of nutmeg to repel aphids and reduce post-harvest fungal and bacterial diseases in banana with positive results.

Achievements:

- Systematic mapping, diversity assessment and species distribution modelling of Sri Lankan nutmeg, and identification of elite nutmeg trees and recommendation for conservation
- The potential of Nutmeg pericarp for extraction of myristicin, antioxidant properties and use in pest and disease controlling revealed
- Capacity building of the Functional Genomics Laboratory and human resource development

Publications (Abstracts):

Nanayakkara *et al*. Effect of Nutmeg pericarp Extract on Survival of Aphids (Hemiptera: Aphididae) in Chilli. iPURSE – 2023, University of Peradeniya

Abeyrathne *et al*. Morphological and Molecular Diversity of Sri Lankan Nutmeg (*Myristica fragrans* Houtt.). 10th International Conference on Agriculture (AGRICO) -2023

Publications (Other)

D.V. Jayatilake. Nutmeg: A spice worth to be in limelight. Institute of Biology eNewsletter article. January 2023 (Volume 3 and Issue 1)

University of Peradeniya

Multidisciplinary Grant Scheme
University Research Council

Grant 265: Radiation shielding for medical procedures: synthesis of cost-effective, lead-free material

Research Team from the University of Peradeniya	
	Dr. V. Sivakumar Department of Physics, Faculty of Science
	Dr. C.P. Jayalath Department of Physics, Faculty of Science
	Dr. U. J. M. A. L. Jayasinghe Department of Radiography / Radiotherapy, Faculty of Allied Health Sciences
	Dr. D. K. K. Nanayakkara Nuclear Medicine Unit, Faculty of Medicine
	Prof. T. M. W. J. Bandara Department of Physics, Faculty of Science
	Dr. K. B. Wijayaratne Department of Physics, Faculty of Science

Narrative Abstract

Background: Radiation shielding is crucial in medical diagnostics to prevent harmful exposures to radiation. Commonly used lead-based materials pose risks to both human health and the environment.

Aim: To develop lead-free, user-friendly and cost-effective radiation shielding material by exploring natural minerals found in Sri Lanka.

Methodology: The project was carried out in four phases:

Phase 1: Collecting natural minerals by exploring mineral resources in Sri Lanka.

Phase 2: Synthesis of shielding materials and execution of a comprehensive study on radiation shielding with various radiation sources.

Phase 3: Developing prototype shields by incorporating the synthesized shielding materials and ensuring their suitability for imaging procedures.

Phase 4: Analysing results through testing in a dental imaging centre to evaluate the performance of the developed prototype collar shield.

Outcome: The project resulted in five conference abstracts and the acquisition of a survey meter.

Achievement:

Designed and developed a lead-free, user-friendly, low-cost radiation collar for diagnostic Cone Beam Computed Tomography (CBCT) imaging in dental radiography.

Publications (Abstracts):

- Eco-friendly radiation shielding materials for diagnostics medical applications: exploring Sri Lankan minerals. 28th Annual Conference (TASME), University of Toronto, Ontario, Canada. July 2024.
- Comparison of X-Ray Attenuation in the Energy Range of 50-80 keV in Aluminium and Zircon Mineral Encased in Epoxy Matrix. The Annual Research Congress of the PGIS (RESCON 2023), University of Peradeniya, December 2023.
- Radiation Shielding for Photon Energies of 60 - 660 Kev by using possible fillers in Epoxy matrix: A comparative study. iPURSE, University of Peradeniya, September 2023.
- Attenuation properties of minerals found in Sri Lanka for high-energy photons.11th International Conference in Radiation (RAD), Montenegro. June 2023. https://doi.org/10.21175/rad.abstr.book.2023.36.14
- Incorporation of Sri Lanka's natural minerals, zircon and apatite in radiation shielding. ICAPS, University of Kelaniya, October 2022.

University of Peradeniya

RESEARCH GRANTS

Saving tiny Hearts Society (StHS) - Research Grant Call for Proposals

TSaving tiny Hearts Society (StHS) has been working to fulfill its mission of raising seed money for grossly under-funded, lifesaving grass roots research of congenital heart defects (CHD's). These research grants are intended to fund early stage science with unique hypotheses fostering the next generation of congenital heart defect research, thus, creating a strong foundation of preliminary evidence to make scientific advancements.

As a private, not-for-profit source of funds for scientists studying congenital heart defects (CHD), the Saving tiny Hearts Society focuses its funding on investigator-initiated, peer-reviewed proposals. This process ensures that researchers propose projects they believe are ready to be tackled with the available knowledge and techniques. This intellectual freedom encourages discovery in areas that scientists believe are most likely to determine hidden causes and discover cures to prolong, improve and save the lives of all children afflicted with congenital heart defects. Proposals can be basic science, translational, or clinical in nature. Proposals focused on the impact of COVID-19 on CHD patients are also invited.

Closing date 01 March 2025
Award amount max USD 100,000
Website : https://savingtinyhearts.org/research/grant-application/

Ara Parseghian Medical Research Fund (APMRF), US

The purpose of the Ara Parseghian Medical Research Fund (APMRF) is to promote research that is targeted toward understanding the molecular basis of Niemann Pick Type C (NPC) disease and developing novel therapeutic strategies to treat and/or cure the disease. In addition, because NPC disease is a cholesterol storage disease, it is anticipated that these studies should provide fundamental insight into cholesterol homeostasis and may serve to increase understanding of atherosclerosis and other cholesterol-related disorders. As part of our mission, the foundation will also seek to foster open collaboration between investigators currently working on NPC disease-related projects.

Closing date 01 March 2025
Award amount max USD 100,000
Website : https://parseghianfund.nd.edu/research/grants/

Environment fund - marine grants

The Waterloo Foundation invites applications for its environment fund - marine grants. These support local and strategic projects aimed at positively impacting marine environments or addressing marine issues at a wider or international scale. Examples of eligible projects include:

- Development of marine protected areas or sustainable fisheries management
- Addressing local causes of over-exploitation of fish stocks and other seafood
- Creation of sustainable livelihoods for coastal and seafood dependent people
- Securing fishing rights or management rights for fishery-dependent communities
- Working on international or regional marine policy
- Campaigning for improved practices in commerce
- Exploring different fishing practices and techniques
- Improving information exchange to eradicate illegal unreported and unregulated fishing

Preference is given to initiatives working to halt the decline of fish stocks upon which communities in developing countries rely, and to those working to bring about sustainable fisheries in Wales. The protection of mangroves and seagrasses to benefit local fisheries is also an eligible project focus.

Closing date 01 March 2025

Award amount £50,000 - £100,000

Website : **https://waterloofoundation.org.uk/EnvironmentMarine.html**

Established Investigator Award (EIA) - Melanoma Research Foundation (MRF), US

The Melanoma Research Foundation (MRF) is committed to advancing research across the spectrum of melanoma – from prevention through diagnosis, staging, treatment and survivorship. The MRF proactively partners with the NCI, Congress, the Department of Defense and other foundations to develop and collaborate on a broad agenda for melanoma research that takes full advantage of all opportunities, while also sharing challenges.

The EIAs provide funding to established melanoma researchers, or senior researchers working in closely related fields who wish to move into melanoma research.

Closing date 01 March 2025 (Forecast)

Award amount max USD 250,000

Website : **https://iuk.ktn-uk.org/opportunities/unlock-funding-for-digital-supply-chain-innovation/**

Racialized Communities Leadership Grant in Family Medicine

The **Racialized Communities Leadership Grant in Family Medicine** supports family physicians in their efforts to enhance the delivery of primary care to racialized communities. Recipients will collectively demonstrate an understanding of the diverse experiences of marginalized groups and a dedication to inclusivity, thereby contributing to moving the field of family medicine forward in achieving true health equity. With this grant the Foundation for Advancing Family Medicine (FAFM) aims to celebrate each recipient's focus and leadership and support their project or initiative that will directly benefit one or more racialized communities.

The project must enhance the delivery of primary care to one or more racialized communities in Canada.

Closing date 01 March 2025 (Forecast)
Award amount min CAD 10,000
Website : **https://www.aucklandzoo.co.nz/get-involved/small-grants-programme**

Initiative Fund - American Society of Agricultural and Biological Engineers (ASABE), US

The Initiative fund was established to provide seed money for new activities, programs, and pilot programs. It has been the funding source of numerous projects and activities that have helped the Society serve its members and the profession.

Initiative fund proposals must align with the Society's objectives, set forth in the Society Bylaws, Article B2, Paragraph 1, and offer significant connectivity with the goals and strategies set forth by the ASABE Board of Trustees. The Initiative Fund makes possible new projects and services that further the interests of the Society. Proposals can represent a onetime investment, or a pilot project that, if proven valuable, can become an ongoing activity of the Society.

Closing date 01 March 2025
Website :
https://jordbruksverket.se/stod/utlysningar-och-upphandlingar/biologisk-mangfald-pa-akermark

Research Grants - Institute of Social and Economic Research (ISER), CA

The purpose of the Institute of Social and Economic Research is to undertake, sponsor and publish social and economic research within such disciplines and in such parts of the world as are deemed of relevance to Newfoundland and Labrador and the broader Atlantic world. Without limiting the generality of the above, research pertaining directly to social and economic development in Newfoundland and Labrador shall be of special importance.

Research Grants are available to help defray the cost of such items as travel, subsistence, research assistance and materials and supplies necessary for carrying out a research project.

ISER research projects may incorporate research assistantship for undergraduate and/or graduate students paid at prevailing university rates and conforming to university regulations. However, ISER Research Grants are not intended to cover faculty research within which is incorporated the research for a graduate student's degree. Such graduate student research support should be sought through the ISER Master and Doctoral Fellowship competitions.

Closing date 01 March 2025
Award amount max CAD 8,000
Website : **https://www.mun.ca/iser/funding-programs/iser-research-grant/**

Agricultural innovation grants

The Carli'n Foundation invites applications for its agricultural innovation grants. These support innovative and eco-sustainable projects carried out in the agricultural sector. Projects must relate to one of the following topics:

- development of innovative agricultural patents;
- low environmental impact innovations in the agricultural production sectors;
- development of non-chemical crop defence methods;
- enhancement of marginal or degraded areas for agricultural purposes;
- related projects with similar aims.

Projects may take place in any country but preference is given to those based in Italy or Switzerland. Applicants must be under the age of 40. Profit-making activities are not eligible.

The maximum project duration is two years.

Closing date 31 March 2025
Website : https://www.fundraiso.ch/en/organisations/fondazione-internazionale-carlin

Dieter Schwarz Courageous Research Grant

The Dieter Schwarz Courageous Research Grant is funded by the Dieter Schwarz Foundation to promote bold project ideas. This will give leading international talents in global competition the opportunity to collaborate with TUM in conducting promising "High Risk - High Gain" research projects.

Scientists must intend to use groundbreaking technology to propose a radical solution to a major challenge in the area of “Digitization and Sustainability” together with a TUM research group.

Closing date 05 March 2025 (Forecast)
Award amount min €1,000,000
Website :

https://www.ias.tum.de/ias/programs/fellowship-programs/dieter-schwarz-courageous-research-grant/

Diversity Fellowship Programs - Kenneth P. Dietrich School of Arts and Sciences, US

The Dietrich School is a vibrant community of scholars and learners, strengthened by the broad range of experiences and perspectives that make us unique. We're committed to promoting diversity and the understanding of diversity among our faculty and students, and across curricula. In the Dietrich School, we don't just recognize our diversity—diversity is a resource of our community as we support each other in fulfilling our greatest potential.

We partner with the Arts and Sciences Graduate Student Organization, the Office for Equity, Diversity, and Inclusion, and other units to identify resources, training opportunities, and experiences that advance the diverse excellence and inclusiveness of our graduate community.

We sponsor the following programs:

- Hot Metal Bridge Post-Bac Program
  - The featured programs for academic year 2024-2025 are:
    - Humanities: History of Art and Architecture
    - Natural Sciences: Biological Sciences, Chemistry, Mathematics, Neuroscience, Psychology
    - Social Sciences: Anthropology, Economics
- K. Leroy Irvis Fellowship Program
- Ronald E. McNair Post-Baccalaureate Program

The Dietrich School welcomes qualified candidates from across the country and around the world into our diverse community of learners. We work closely with referring faculty and staff partners from other colleges and universities to ensure that your best students receive the high-quality education and training that our graduate programs are known for and the personalized one-on-one attention that is rare within the context of a large research university.

Closing date 15 March 2025 (Forecast)
Website : https://www.asgraduate.pitt.edu/diversity/access-and-diversity-fellowship-programs

Marine science and engineering summer internships

For an immersion in a marine science or technology internship, apply to Florida Atlantic University (FAU) Harbor Branch Oceanographic Institute Summer Internship Program. Open to qualified undergraduate and graduate students.

Research Areas:

- Aquaculture and Stock Enhancement
- Biomedical and Biotechnology
- Marine Ecosystem Health
- Ocean Dynamics and Modeling
- Ocean Engineering and Technology
- Ocean Exploration
- Outreach and Informal Education

Closing date 01 March 2025 (Forecast)
Website : https://www.fau.edu/hboi/education-and-outreach/summer-internship-program/

Postdoctoral Fellowship - Cancer Research Institute (CRI), US

The CRI Irvington Postdoctoral Fellowship Program supports qualified young scientists at leading universities and research centers around the world who wish to receive training in fundamental immunology or cancer immunology.

A panel of scientists drawn from our Scientific Advisory Council rigorously evaluates each candidate, the intended sponsor and training environment, and the nature and feasibility of the proposed project.

The Cancer Research Institute recognizes that getting to the next great breakthrough in cancer treatment will require continued investment in fundamental research and training. CRI, therefore, invites postdoctoral fellows working in both fundamental immunology and tumor immunology to apply for funding.

CRI seeks hypothesis-driven, mechanistic studies in both immunology and tumor immunology. The applicant and sponsor should make every effort to demonstrate the potential of the proposed studies to directly impact our understanding of the immune system's role in cancer.

Closing date 01 March 2025 (Forecast)
Award amount min USD 228,000
Website : https://www.cancerresearch.org/cri-irvington-postdoctoral-fellowship

Gerald Westheimer career development fellowship

The Leo Baeck Institute invites applications for the Gerald Westheimer career development fellowship. This supports early-career researchers in developing their work in the field of historical or cultural issues of the Jewish experience in German-speaking lands.

Closing date 01 March 2025
Award amount max USD 25,000
Website : https://www.lbi.org/about/fellowships/westheimer-fellowship/

Newkirk fellowships

The Newkirk Fellowship provides financial support for research visits to HAO. The scientific program of HAO is solar-terrestrial physics, broadly interpreted. Included is solar physics, physics of the heliosphere, the study of geospace and space weather, and the physics of the Earth's magnetosphere and upper atmosphere.

HAO Newkirk Fellows will work with guidance from HAO scientists and engineers on projects related to their thesis, qualifying exams, or other research projects. During this time Newkirk Fellows will have access to state-of-the-art observational and computational facilities in their thesis work. These include the Mauna Loa Observatory in Hawaii and the NCAR-Wyoming Supercomputing Center (NWSC), as well as local Unix workstations, data archives, and libraries at HAO/NCAR. HAO Newkirk Fellows are encouraged to participate in a wide range of active research ventures, including study of the Earth's ionosphere, thermosphere, and magnetosphere, observations and simulations of coronal mass ejections, spectro-polarimetric observations and interpretation using HAO instrumentation and data inversion tools, probing solar magnetism through observations and modeling, and instrument development.

Closing date 01 March 2025
Award amount max USD 36,000
Website : https://www2.hao.ucar.edu/about/visitor-program/newkirk-fellowship

Neporany Doctoral Fellowship

The **Osyp and Josaphat Neporany Educational Fund** was established by CFUS in 1978 pursuant to the wishes of the late Osyp and Josaphat Neporany. The Fund was to be used for scholarships, bursaries, post-doctoral studies and research grants in the areas of political science, economics and related fields.

The **Neporany Fellowship Program** was subsequently created as a vehicle for allocating the funds and over the years, it has variously provided support for post-graduate grants, scholarships, exchanges, and combined research and teaching fellowships. The first award was issued in 1982.

A major objective of the **Neporany Fellowship Program** has been to provide opportunities for recent graduates to establish their academic credentials whether through support of research leading to publication or by way of teaching appointments. More recently, the Fellowship has been made available also to doctoral students completing their dissertations.

The award, disbursed annually, recognizes academic excellence and the quality of the research/dissertation proposal.

Closing date 01 March 2025
Award amount CAD 5,000 - CAD 20,000
Website : https://cfus.ca/programs-funds/neporany-doctoral-fellowship/

Academy Nicholl Fellowships in Screenwriting

Each year, the Academy Nicholl screenwriting competition awards fellowships to amateur screenwriters. Fellowship winners are invited to participate in awards week ceremonies and seminars, receive individualized Academy member mentorship and are expected to complete at least one original feature film screenplay during their Fellowship year.

Closing date 01 March 2025 (Forecast)
Closing date note Early entry fee of US$50 (by 11:59 p.m. Pacific Time)
Deadline Information There is a maximum entry limit of 5,500 screenplays for 2024.

The competition will close to submissions once the maximum number of entries are received or the final deadline is reached--whichever occurs first.

Recurrence This call is repeated once a year.
Award amount min USD 35,000
Website: https://www.oscars.org/nicholl

Postdoctoral and Faculty Fellowships: One-month and Four-month Fellowships

The Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition (GLC), part of the MacMillan Center for International and Area Studies at Yale University, invites applications for its 2024-2025 Fellowship Program. The Center seeks to promote a better understanding of all aspects of the institution of slavery from the earliest times to the present. It especially welcomes proposals that will utilize the special collections of the Yale University Libraries or other research collections of the New England area, and explicitly engage issues of slavery, resistance, abolition, and their legacies. Scholars from all disciplines are encouraged to apply.

Closing date 01 March 2025 (Forecast)
Award amount USD 5,500 - USD 23,332
Website : https://macmillan.yale.edu/glc

Leo Baeck fellowship programme

This supports doctoral students carrying out research into the history and culture of Central European Jewry. Projects may be related to any period or field, including literature, philosophy, history, musicology, and any region, such as Europe, Israel or the Americas, as long as they relate to German-speaking Jewry.

Closing date 01 March 2025 (Forecast)
Award amount €18,600 - €30,600
Website : https://www.studienstiftung.de/en/leo-baeck-fellowship

Franz Werfel fellowship

The Austrian Exchange Service (OEAD) invites applications for the Franz Werfel fellowship. This enables young university teachers of German language and Austrian literature to spend time as a visiting researcher at university departments in Austria.

University teachers from outside Austria, who focus on Austrian literature, may apply. Applicants must be young academics in the early years of their academic career who have not studied or researched for at least six months prior to taking up the grant.

Up to seven fellowships are available, each consisting of a monthly grant of up to €1,150, a €600 relocation allowance, as well as tuition fee exemption, over four to nine months. For applicants from non-European developing countries, a travel grant of up to €1,000 is also available. Fellowships can be renewed up to a total duration of 18 months.

Closing date 01 March 2025
Award amount max €22,300
Website : https://grants.at/en/

Gruber Foundation fellowship programme

The International Astronomical Union, on behalf of the Gruber Foundation, invites applications for the Gruber Foundation fellowship programme. This aims to promote the science of cosmology and other branches of astronomy.

Closing date 01 March 2025
Award amount max USD 75,000
Website : https://www.iau.org/science/grants_prizes/gruber_foundation/fellowships/

Ted Scripps Fellowships in Environmental Journalism

Thanks to a campus-wide commitment to research and teaching on the many facets of environmental problems, the university provides Scripps fellows with a wide range of intellectual resources. This flexible, non-degree program allows fellows to tailor these resources to meet their needs and interests. During this period, fellows deepen their knowledge of the environment through courses, weekly seminars, and field trips. They also engage in independent study expected to lead to a significant piece of journalistic work.

Closing date 01 March 2025
Award amount min USD 80,000
Website : https://www.colorado.edu/cej/scripps-fellowships/core-program

Digital Humanities Fellowships

The Center for Digital Scholarship (CDS) at the American Philosophical Society invites applications for Digital Humanities Fellowships at the American Philosophical Society's Library & Museum. These fellowships are open to scholars who are developing digital projects that: 1) utilize the APS's Library & Museum collections, open datasets, or other APS holdings to advance a digital component of an independent research project, or, 2) seek to apply existing tools and expertise to digital projects developed in collaboration with the Library & Museum's Center for Digital Scholarship.

Closing date 03 March 2025 (Forecast)
Award amount max USD 3,000
Website : https://www.amphilsoc.org/grants/digital-humanities-fellowships

Visiting professor fellowships

The Lady Davis Fellowship Trust invites applications for its visiting professor fellowships at Technion Institute. These support visits of two months to one year during the academic year.

Closing date 30 November 2025
Award amount USD 4,200 - USD 30,000
Website : http://ldft.huji.ac.il/fellowships-information/technion-fellowships/visiting-professors

Fellowship in Residence at the "Young Academy for Sustainability Research"

FRIAS unites research in all disciplines. The Institute supports academic exchange between disciplines, different cultures and countries, between established and younger researchers. Furthermore, FRIAS engages in activities opening the research community to society and politics. The YAS Fellow in Residence will be part of this community and benefit from the lively research environment of the university and its eleven faculties.

The YAS seeks to foster cross-disciplinary cooperation between distinguished young scholars in the field of sustainability research. The Academy's objective is to provide an institutional structure that will enable early-career researchers to foster multidisciplinary dialogue and collaboration, to start collaborative projects, and to engage with the general public. The YAS is self-organised by its members, with support by the FRIAS team.

The YAS Fellow in Residence will receive a 3-year contract at FRIAS and serve as a liaison between the YAS, the FRIAS, and the sustainability research community at the University of Freiburg. In this bridging function, the Fellow in Residence will initiate research projects and promote outreach activities. The Fellow in Residence is a member of the YAS with access to the group budget. The YAS Fellow also becomes part of the FRIAS community and participates in FRIAS activities and is given time and the opportunity to pursue their own research project.

Closing date 04 March 2025 (Forecast)
Award amount max €75,000
Website : **https://redirects.uni-freiburg.de/www.frias.uni-freiburg.de/en/news/call-for-applications/call-for-applications-for-1-fellowship-in-residence-at-frias-within-the-young-academy-for-sustainability-research201d-yas**

Charles A. King Trust Postdoctoral Research Fellowship Program

The Charles A. King Trust was created to "support and promote the investigation of human disease and the alleviation of human suffering through improved treatment." The Charles A. King Trust Postdoctoral Fellowship Program provides funding to postdoctoral fellows and mentored clinician scientists in the mid to late stages of their research training in basic and preclinical science, and clinical, health services, population health, and implementation research to help them achieve their goals of becoming independent investigators in biomedical research.

The program supports research across biomedical fields that focuses on the causes of human disease with the mission of improving treatment. Applicants may apply under one of the two separate, but linked programs:

- Basic and Preclinical Science Award Program:
  - Proposals in the basic sciences seek to increase our understanding of the underlying biological processes relevant to human health and disease. Preclinical sciences seek to move findings from basic research towards clinical application.
- Clinical and Implementation Research Award Program:
  - Clinical or implementation research funded by this program support human studies including physiological research, behavioral science and health education research, translational research (the application of bench research to patient care), epidemiological research, health services and policy research, outcomes research, and research about healthcare delivery and population health, regardless of specialty or discipline.
  -

Closing date 05 March 2025
Award amount USD 194,100 - USD 215,000
Website : **https://hria.org/tmf/king/**

Analysis

H-index: A Flawed Marrix

The H-index proposed by Hirsch in 2005[1], a popular metric used to assess the impact and productivity of researchers, has gained significant traction in recent years. However, its effectiveness as a sole measure of research output has been subject to considerable debate.

A Case Study: The Higgs Boson Discovery Paper

Consider the landmark paper "Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC." This paper, published in Physics Letters B in 2012, boasts a staggering 3171 authors. If each of these authors were to cite this paper in a single publication, they would instantly accrue 3171 citations.
To secure the same number of citations as one of the Higgs boson paper's authors, one would need to publish nearly 800 papers, assuming an average of four authors per paper. This stark contrast highlights a significant limitation of the H-index: it can be heavily influenced by factors beyond an individual researcher's control, such as the size of their research group or the field's overall citation practices.
Conversely, a researcher in a smaller field, such as a niche area of mathematics or philosophy, might struggle to achieve such a high citation count.

The Need for a More Comprehensive Approach

Recognizing the limitations of the H-index, many institutions and organizations have turned to more sophisticated metrics. Stanford University's list of "World's Top 2%" scientists, for example, relies on the c-score, a composite indicator that considers multiple factors:

- **Total citations (NC):** A straightforward measure of the total number of times a researcher's work has been cited.
- **H-index (H):** The number of papers published by a researcher that have been cited at least H times.
- **Hm-index (H-index adjusted for the number of authors):** A modification of the H-index that accounts for the number of authors on a paper.
- **Citations to single-author papers (NCS):** The number of citations received by the researcher's single-authored papers.
- **Citations to single or first-author papers (NCSF):** The number of citations received by the researcher's single- or first-authored papers.
- **Citations to single, first, or last-author papers (NCSFL):** The number of citations received by the researcher's single-, first-, or last-authored papers.

By incorporating these diverse metrics, the c-score provides a more nuanced and comprehensive assessment of a researcher's impact. Unfortunately, the exact formula and weights used by Stanford University to calculate the c-score are proprietary.
While the H-index can be a useful tool for evaluating research output, it should not be relied upon exclusively. A more holistic approach that considers a range of factors, including the quality of research, the impact on the field, and the specific context of the research, is essential. As the academic landscape continues to evolve, it is crucial to develop and refine metrics that accurately reflect the true contributions of researchers.

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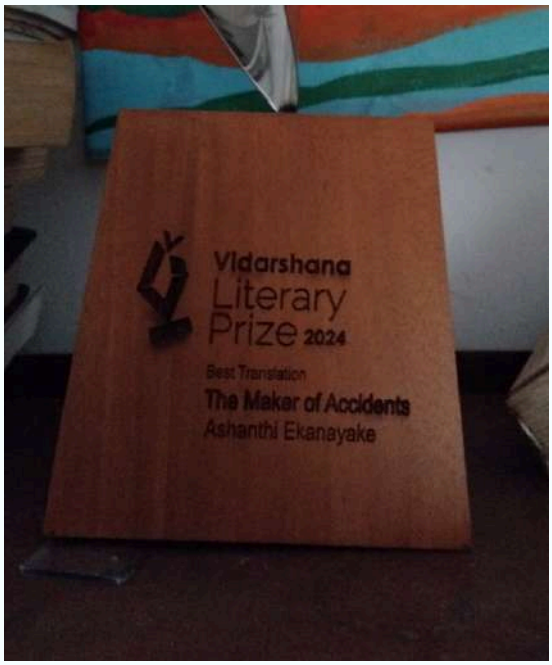
[1] Hirsch JE. An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences. 2005; 102(46):16569–16572. https://doi.org/10.1073/pnas.0507655102

Celebrating Excellence: Awards Won by Our University Staff

Ms. Ashanthi Ekanayake Wins Inaugural Vidharshana Prize for Best Translation

Ashanthi Ekanayake, Senior Instructor at ELTD, University of Peradeniya, has won the inaugural Vidharshana Prize for Best Translation. She translated Professor Amarakeerthi Liyanage's novel Ahambakaraka into English as Maker of Accidents, showcasing her exceptional literary skills. Congratulations on this remarkable achievement



Prof. HDWT Damayanthi Honored for Excellence and Research

Prof. HDWT Damayanthi Dassanayake received the Excellence in Sri Lankan Nursing Education Award from the Sri Lanka Nurses' Association on May 20, 2024, recognizing her outstanding contributions. Additionally, she co-authored a comment in The Lancet Global Health on menopause as part of the MARIE Project, highlighting this critical global health issue. Congratulations on these remarkable achievements!

National Award for Excellence in Agricultural Research 2021

A research team from the Faculty of Agriculture, University of Peradeniya, won the prestigious National Award for Excellence in Agricultural Research 2021 from the Sri Lanka Council for Agricultural Research Policy (SLCARP). The team secured First Prize in the Non-Plantation Sector for their groundbreaking research on “Evolution of Sri Lankan Rice Germplasm for Xa21-mediated bacterial blight resistance.”
The team included:

1. Dr. K.K.D.V. Jayatilake (Department of Agricultural Biology)
2. Prof. S.A.C.N. Perera (Department of Agricultural Biology)
3. Mrs. W.D.P. Weerasinghe (Regional Rice Research and Development Centre, Bombuwala)
4. Prof. H.M.V.G. Herath (Department of Agricultural Biology)
5. Prof. L.D.B. Suriyagoda (Department of Crop Science)
6. Mrs. N.H.L.D.L.D. Nanayakkara (Postgraduate Institute of Agriculture)
7. Mrs. I.K. Edirisinghe (Postgraduate Institute of Agriculture)
8. Ms. L.N. Dissanayake (Postgraduate Institute of Agriculture)

The research was supported by two University Research Grants awarded to Dr. K.K.D.V. Jayatilake (URG/2016/91/Ag) and Prof. S.A.C.N. Perera (URG/2017/05/Ag). Congratulations to the team for this remarkable achievement!

Dr. Bimali Sanjeevani Weerakoon Receives National Educator Award 2024

Dr. Bimali Sanjeevani Weerakoon has been honored with the Silver Award at the National Educator Award 2024. This prestigious recognition celebrates her excellence in teaching, scholarly contributions, and national impact in the field of Nursing and Health Sciences. Congratulations on this remarkable achievement!

University Members Receive Key Appointments

Several distinguished faculty members have recently been appointed to prestigious positions, reflecting the University's strong academic standing and the expertise of its faculty.

- **Prof. Janendra De Costa** from the Faculty of Agriculture has been appointed as the Chairman of the Tea Research Institute. This appointment recognizes his significant contributions to the field of tea research and his leadership qualities.

- **Prof. Janaka Ekanayake** from the Faculty of Engineering and **Prof. Jeevika Weerahewa** from the Faculty of Agriculture have been appointed as members of the National Research Council. This appointment underscores their expertise and will provide valuable insights into national research priorities.

- **Dr. Nadisha Piyarathne** and **Prof. Ruwan Jayasinghe** from the Faculty of Dental Sciences have been appointed to the Resource Pool of Expertise for Research Review and Roadmap Development by the Ministry of Education, Science and Technology. This appointment highlights their research excellence and will contribute to the development of a strong research roadmap for the country.

The University congratulates these members on their well-deserved appointments and wishes them every success in their new roles.

Research Publication Facilitation Fund
University Of Peradeniya

The new application for Research Publication Facilitation application is now available in **https://site.pdn.ac.lk/centers/urc**
According to the new process introduced for the reimbursement of Article processing charges, applicants can get prior approval for the payments before submission of the application. Upon receiving the approval for the APC from URC, usually through an email, submit the invoice for the payment of the APC, and the credit card statement to process the payment.

Note:

- **Application is a fillable form, which you can fill using Adobe Acrobat Reader latest versions.**
- **Furnish all the details, sign the application, get the Head and the Dean to sign.**
- **Attach a copy of the complete manuscript and the acceptance letter.**
- **Only the full-length articles published in SCI/SSCI/SCI-expanded/SSCI-expanded with an impact factor of 1 or higher will be considered for RPFF**
- **If the impact factor is greater than or equal to 1 and less than 2, USD 500 per author up to a maximum of USD 1000 per paper per year.**
- **If the impact factor is greater than or equal to 2, USD 500 per author up to a maximum of USD 1500 per paper per year.**

Special Note:

- **The payment must be done by a permanent staff member of the University of Peradeniya.**
- **If two authors claim for the same article fill in two separate applications and send both applications together (Attaching one copy of the manuscript and the invoice is adequate). If one author paid for the APC, a consent letter from the second author should be submitted.**
- **Funding is subjected to availability of funds.**

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Looking forward to your contributions to the April edition

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