BITSOC NEWS

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DEPARTMENT OF BIOTECHNOLOGY

FACULTY OF AGRICULTURE AND PLANTATION MANAGEMENT

WAYAMBA UNIVERSITY OF SRI LANKA

BITSOC EVENTS

BitSoc "Padura" 2024

The BitSoc proudly hosted its annual "Padura" event on the 6th of November 2024 from 6.00 p.m. onwards at the Faculty Auditorium. This cherished tradition, initiated in 2009, aims to warmly welcome the 3rd-year students selected to the Department of Biotechnology. The evening was coloured up with vibrant singing and dancing performances by the 4th and 3rd year Biotechnology specializing students, creating a spirited and memorable atmosphere showcasing the talents and unity of the students.



Webinar on

"The Promise of Vaccines in a Pandemic Era; Are We Prepared?"

A webinar titled "The Promise of Vaccines in a Pandemic Era: Are We Prepared?" was successfully organized by the BitSoc on February 2nd, 2025, via Zoom. The session featured an insightful presentation by

Dr. Dilini Rathnayake (BSc. Hons, PhD), Postdoctoral Research Officer, Burnet Institute of Medical Research, Australia.

The webinar explored several important aspects, including the transformative journey of vaccine advancements, challenges in vaccine development, global response to the COVID-19 pandemic, mechanisms of vaccine action, and the importance of immunization strategies. The BitSoc members enthusiastically participated in this event as the audience. A heartfelt thanks to Dr Dilini for sharing her valuable insights and to everyone who contributed to making this webinar a remarkable event!

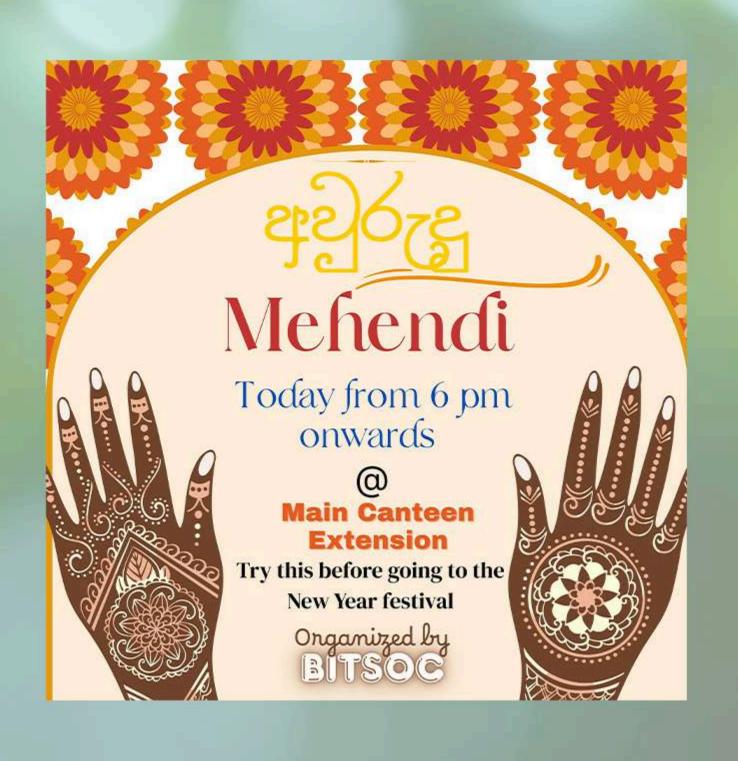




Fundraising Activities of BitSoc

The BitSoc society successfully organized several fundraising activities with the intention of supporting the upcoming Biotechnology Day, 2025, and other future activities. Among those, a vibrant Aurudu Mehendi fundraising event was held on April 25th, 2025, and an Iced Coffee Stall was set up on April 26th, 2025. These activities attracted many enthusiastic participants as a result of the collective effort of all BitSoc members, and a considerable amount of funds was raised to support other future initiatives.





BT Cafe Charity

Alms Giving for Little Children

The BT Café Students' Committee of the Department of Biotechnology, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka, organized alms giving at Shripati Lama Piyasa (Boys), Diyakalamulla on Saturday, December 14, 2024. This heartfelt initiative is aimed at supporting children and delighting their day with fun, joy, and excitement. The children were treated with delicious food, refreshing beverages, and were provided with essential items as gifts.

To make this day special and memorable for them, the members of the BT Café actively participated in this event with a couple of entertaining activities. This activity was successfully accomplished under the guidance of the Head, Department of Biotechnology, and the Advisor of the BT Cafe Students' Committee, Dr Priyanwada Warakagoda, with the support of the academic staff members of the Department of Biotechnology.





BT Café Scholarship for Needy Students

The BT Café Students' Committee of the Department of Biotechnology, Wayamba University of Sri Lanka, granted scholarships to two financially challenged final-year students conducting research within the faculty premises. This support aims to cover their external accommodation expenses over five months, as they are ineligible for hostel facilities. The initiative reflects the Committee's strong commitment to foster a culture of empathy and support for students in need as a department-level initiative. The committee extended their gratitude for the guidance and support given by Dr Priyanwada Warakagoda, Head of the Department of Biotechnology, and the Advisor of the BT Café, especially for conducting the selection process transparently while maintaining confidentiality.

Achievements of BT Academic Staff

Appointment as Professor in Biotechnology

Dr Wajira Balasooriya has been promoted as a professor in biotechnology, with effect from 18th September 2023, while serving as a Senior Lecturer at the Department of Biotechnology since 2014. Prof. Balasooriya holds a BSc and MSc in Agriculture from the University of Peradeniya, Sri Lanka. She furthered her studies at Ghent University in Belgium, earning a MSc in Environmental Sanitation and a PhD in Applied Biological Sciences. Her postdoctoral research includes work at the Argonne National Laboratory in Illinois, USA, and the Department of Environmental Studies and Sciences at the University of Winnipeg, Canada.



Her research primarily centers on environmental microbiota and their applications in soil fertility management, environmental biotechnology, and related disciplines. Congratulations, Prof. Balasooriya, on this remarkable accomplishment!

Accomplishment of Doctoral Degree in Science

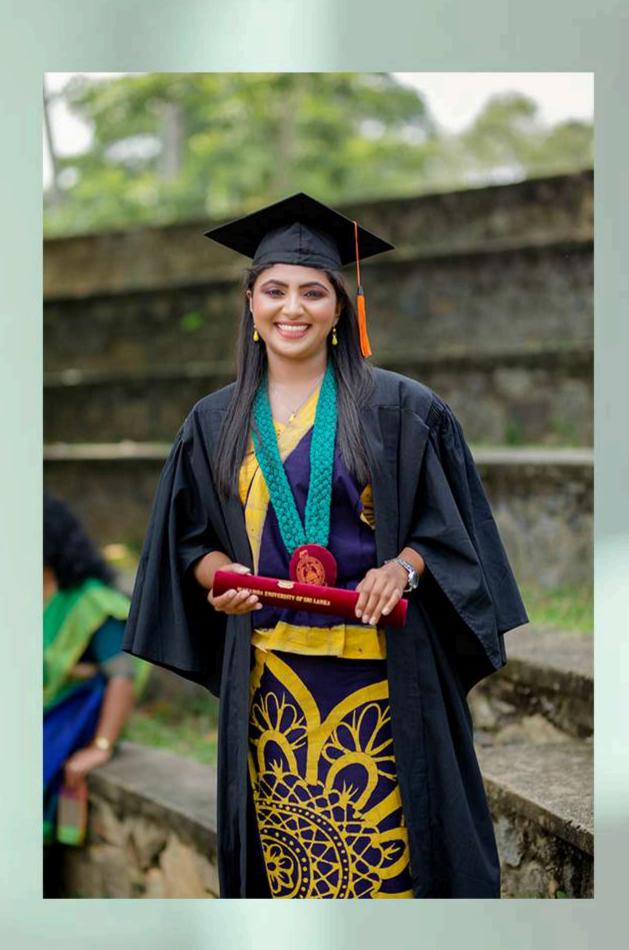
Dr Shehan Kurera, currently serving as a Lecturer, successfully obtained his Doctoral Degree in Science from Jeju National University, South Korea. Dr Kurera's doctoral research titled "Identification, Optimization, and Characterization of Polydeoxyribonucleotides (PDRN) Extracted from Olive Flounder Eggs and Investigate Tissue Regeneration Potential" offers valuable insights into the development of marine-derived bioproducts with significant applications in regenerative medicine and biotechnology paving the way for novel therapeutic solutions. We extend our heartfelt congratulations to Dr Kurera on this achievement and look forward to his continued contributions to the field of biotechnology and the Wayamba University of Sri Lanka.



Achievements of BT Alumni

Securing Master Scholarship at University of Lethbridge, Alberta, Canada

Ms Upekkha Abhayarathne, of the 2015/2016 batch and a former Temporary Demonstrator at the Department of Biotechnology, has been awarded a fully funded scholarship to pursue a Master of Science in Biological Sciences at the University of Lethbridge, Alberta, Canada. Warmest congratulations to Ms Upekkha on this outstanding achievement and wish her continued success in all her future academic and professional endeavors!



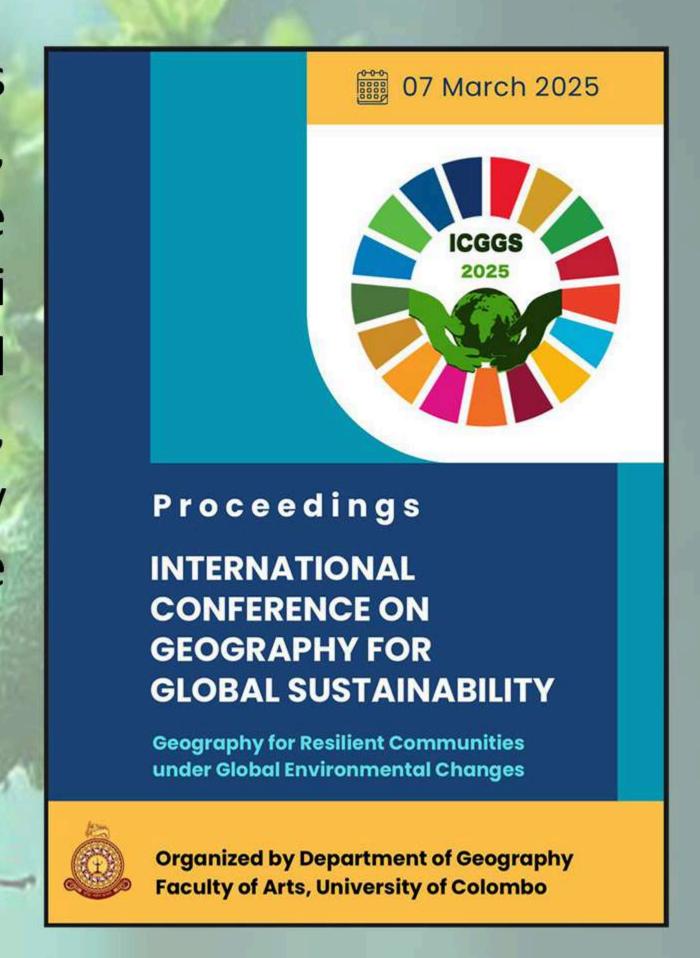
Achievements of BT Students

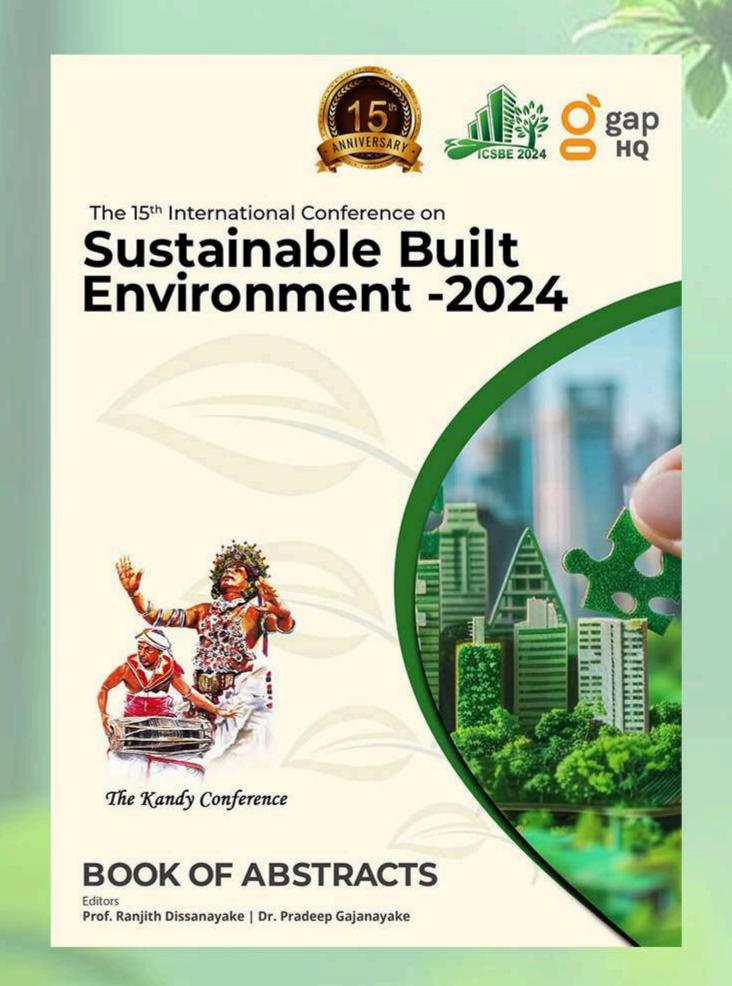
Publications

Mr Akeel Shahan representing the 2018/2019 batch of the Department of Biotechnology, presented his research findings under the topic "The Perception of Paper Recycling Among Sri Lankans and the Adaptation of Paper Recycling Management Techniques" at the Online Special Session on FOUNTAIN – Sustainable University-Industry Collaborations during the 15th International Conference on Sustainable Built Environment (ICSBE) 2024 – The Kandy Conference, held from 20th to 22nd December 2024.



He also published another publication along with co-authors Sharon Rochelle, Sachini Sooriyapperuma, Dulani Abesekara, Chethana Nuwarawewa and Chathuni Sooriyapperuma under the title of "Perception and Attitudes towards Paper Recycling In Sri Lanka: A Circular Economy Perspective" at the International Conference on Geography for Global Sustainability (ICGGS) 2025, held on 07th March 2025 at the Department of Geography, Faculty of Arts, University of Colombo, Sri Lanka. Both projects were conducted under the supervision of Dr Lalinka Herath.





Mr Nimesh Dananjana, representing the 2018/2019 batch of the Department of Biotechnology, presented his research findings under the topic of "Spatial Patterns of PM2.5 and PM10 Air Pollution in Colombo Municipal Council Area" at the 15th International Conference on Sustainable Built Environment (ICSBE) 2024, held in Kandy, Sri Lanka. His research paper was honored with the prestigious **Best Scientific Paper Award** under the special session on Climate Risk Management and Mitigation. This work has made impactful contributions to environmental sciences and public health researches. The study focused on analyzing the spatial distribution of particulate matter (PM2.5 and PM10) across the Colombo Municipal Council (CMC) area: a crucial urban hub in Sri Lanka.

The research uncovered distinct patterns, revealing higher pollutant concentrations in the northern and northeastern sectors and comparatively lower levels in the southern and southwestern zones. Alarmingly, the PM2.5 and PM10 levels in the most affected areas exceeded the air quality standards set by the Central Environmental Authority of Sri Lanka, underscoring a critical public health concern.



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Ms Nethmini Wijendrasinghe representing the 2018/2019 batch of the Department of Biotechnology, presented her research findings under the topic "In Silico Analysis of Drought Responsive OsSWEET13 Gene Variations in Sri Lankan Traditional Rice Germplasm" under the track Trends in Food, Nutrition and Agriculture at the Proceedings of the 13th YSF Symposium organized by the Young Scientists Forum, National Science and Technology Commission, which was held on 24th January 2025. Also, she achieved the 1st place Merit Award as the most outstanding oral presenter of the symposium. The research was conducted under the supervision of Dr Radhika Gimhani.



Ms Anuttara Kariyawasam representing the 2018/2019 batch of the Department of Biotechnology, presented her research findings under the topic of "Allele Mining for Salinity Responsive *OsSWEET15* Gene in Select Sri Lankan Rice Germplasm" at the track Trends in Food, Nutrition and Agriculture at the Proceedings of the 13th YSF Symposium organized by the Young Scientists Forum, National Science and Technology Commission, which was held on 24th January 2025. Also, she achieved the 2nd place Merit Award for the outstanding oral presentation made during the symposium. The research was conducted under the supervision of Dr Radhika Gimhani.





Mr Ashan Perera representing the 2018/2019 batch of the Department of Biotechnology, presented his research findings under the topic of "Optimization of an Endpoint PCR Assay for Detection of Watermelon Mosaic Virus" at the Proceedings of the 13th YSF Symposium organized by the Young Scientists Forum, National Science and Technology Commission, which was held on 24th January 2025. The research was conducted under the supervision of Snr. Prof. Nisha Kottearachchi.

Ms Hiruni Palanadagama representing the 2018/2019 batch of the Department of Biotechnology, presented her research findings under the topic of "Optimization of Surface Sterilization Protocol for Shoot Tip Explants of Cultivar 'Ambul-Nadee' (Musa sp.)" at the Proceedings of the 13th YSF Symposium organized by the Young Scientists Forum, National Science and Technology Commission, which was held on 24th January 2025. The research was conducted under the supervision of Dr Priyanwada Warakagoda.



A group of final year undergraduates of Department of Biotechnology (2019-2020 batch), Mr Chathura Jayathissa, Ms Dinithi Gunawardhana, Mr Sakuna Jayathilaka, Ms Chathuni Sooriyapperuma, Isuranga Senevirathna, Mr Harsha Ranasinghe, Mr Indrakeela Madola, and Mr Duminda Ranasinghe presented their research findings under the title of

"Assessing Tree Species Richness and Diversity in the Kankaniyamulla Forest Reserve"

at the 29th International Forestry and Environment Symposium (2025), organized by the Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Sri Lanka. This study highlighted findings related to biodiversity important conservation and it was supervised by Prof. Kapila Yakandawala



The article "Navigating the Hidden Climate Risk: Microplastic Pollution and Plastic Waste – Innovative Strategies for a Sustainable Future", co-authored by Mr Akeel Shahan, has been featured in the latest edition of The Gap magazine.

This insightful article sheds light on pressing environmental concerns and proposes sustainable solutions for the future. The printed version of the magazine was officially launched at the Inauguration Ceremony of the ICSBE 2024 – Kandy Conference, while the online version is available to explore.



Earth and Mother Nature were created thousands of years ago. Keeping apart the mythological concepts, according to science, the solar system, which also includes the earth, was created by the big bag theory. The earth, which was only composed of lava and volcanoes, slowly, by decades, cooled down, and later it was filled with sea. At the earlier stage, the earth had no oxygen, humans, or any animals at all. As the first living organism from the domain of Archaea was evolved and slowly evolved, the world with its diverse range of living organisms, which include humans, was developed. Earth and the mother of nature provide every essential to us one by one. To eat fresh fruits and to drink clean water to breathe fresh air. But we humans, what are we doing now?



environments. Furthermore, the persistence of microplastics in the environment means that their accumulation will only continue to increase over time, exacerbating the problem. Ultimately, the long-term consequences of plastic pollution on human health are still largely unknown. However, there is growing concern about the potential link between microplastics and plastic chemicals and diseases such as cancer, reproductive issues, and endocrine disruption. In order to mitigate these hazardous effects and future risks, it is crucial to take immediate action.

This includes implementing stricter regulations on the production and disposal of plastic, promoting sustainable alternatives to single-use plastics, and investing in research and technology to develop more eco-friendly materials. The hazardous effects of microplastics and plastic are evident in their impact on marine life. For example, research has shown that plastic debris can cause entanglement and ingestion issues for marine animals such as sea turtles, seabirds, and marine mammals. Nature itself is evolving and fighting against this plastic and microplastic crisis by evolving some microorganisms to eat plastic and some bacteria and algae that can degrade microplastic as well. For example, ideonella sakaiensis, 201-F6, is a bacterium capable of degrading PET into ecologically favorable monomers such as TA (terephthalic acid) and ethylene glycol. This bacterium can produce two enzymes (PETase and MHETase) that hydrolyze PET and use plastic trash as its principal source of carbon nutrients.

In addition, microplastics and plastic pollution can also lead to ecosystem disruption, decreased biodiversity, and contamination of soil and freshwater sources. Furthermore, microplastics can act as carriers for harmful pollutants such as heavy metals and persistent organic pollutants, which can bioaccumulate in organisms and pose risks to their health and survival. With smart strategies to reduce and overcome this plastic pollution crisis, we can save our mother nature and our gift of a wonderful place to our next generation.

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Mr. M.A.M.A. Shahan BSc (Hons) Agriculture and Plantation Management Wayamba University of Sri Lanka

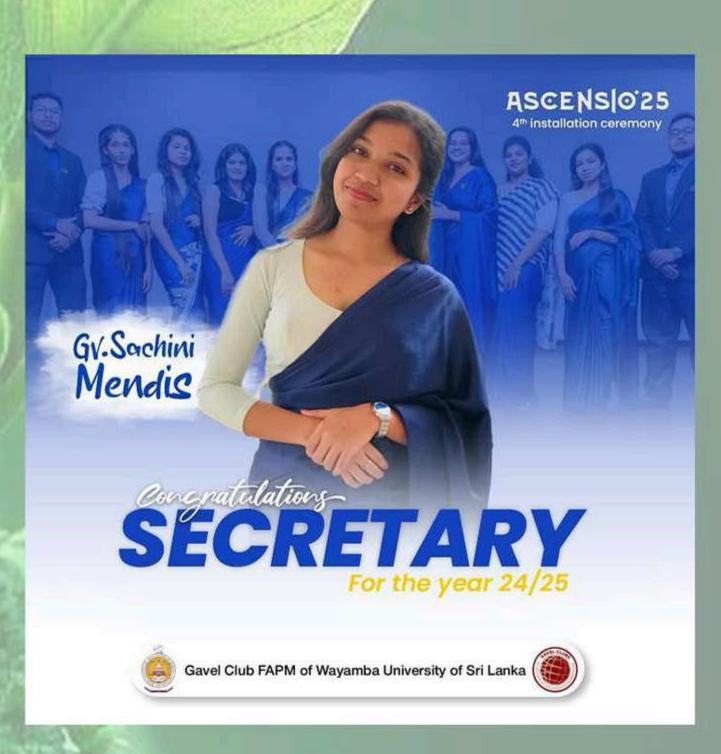
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Innovating for a Resilient Future with Sustainable Solutions from Nature and Beyond

Representing Leading Societies of WUSL

Gavel Club of the Faculty of Agriculture and Plantation Management is a vibrant society dedicated to enhancing public speaking skills in English and promoting numerous activities to polish up students in English. For the 2025/2026 term, Ms Uththara Nishshanka and Ms Sachini Mendis, representing the 2020/2021 batch of the Department of Biotechnology, have been appointed as the **President and the Secretary**. We congratulate them and wish them a successful and inspiring term ahead!







The **FAPM Nature Team** is a university-registered organization committed to the study, conservation, and promotion of the natural environment. Notably, the FAPM Nature Team is the only university-affiliated environmental organization in Sri Lanka with external membership, connecting with government-registered schools in the Western and North-Western provinces. Since its establishment, the team has contributed significantly to environmental conservation efforts and education across Sri Lanka. Ms Kawya Hettiarachchi, representing the 2020/2021 batch of the Department of Biotechnology has been appointed as the **Secretary** for the 2025/2026 term of this society. We extend our heartfelt congratulations and look forward to witnessing her impactful leadership in the coming term.

Tree for Life is a volunteer-based society focused on climate action under SDG 13. It held a mission to mitigate carbon emissions and expand forest cover to reduce the adverse effects of climate change. Significantly, Tree for Life has officially joined the United Nations' Action Campaign to further promote and support its activities globally. Ms Sanjula Wimalaweera, one of the students in the Department of Biotechnology (2020/2021 batch), has been appointed as the **President** for the 2025/2026 term of this society. Our sincere congratulations to her for a remarkable leadership in the upcoming term.



The Zero Plastic Movement is a volunteer-driven initiative committed to reducing plastic waste and promoting a sustainable future. Guided by its vision of achieving a world where nature is free from plastic pollution, the movement works to protect both humans and animals from the harmful effects of microplastics. We are pleased to announce that Ms Udeshi Sandeepani (2020/2021 batch), one of the students of the Department of Biotechnology, has been appointed as the Secretary of the Zero Plastic Movement for the 2025/2026 term. Heartfelt congratulations to Ms. Udeshi and look forward to seeing her leadership contribute towards creating a greener, cleaner environment.



SDG Youth Challenge Grand Finale

A team of students from the Department of Biotechnology, Wayamba University of Sri Lanka, successfully represented the university at the Grand Finale of the SDG Youth Challenge, held during the International Conference of Business and Information (ICBI) - 2025, organized by the University of Kelaniya. The team, comprised Mr Akeel Shahan, Ms Dulani Nimaya, Ms Sachini Sooriyapperuma, Mr Kalindu Wikramasinghe, Ms Wimansa Wijesinghe, and Ms Thenayanie Karunasinghe from the 2018/2019 and 2019/2020 batches. They showcased their innovative project ECOWAVE, a sustainable elephant repellent device, where their major aim was to mitigate human-elephant conflict.



Their remarkable innovation and dedication to sustainability earned them the honour of being selected among the **Top Five Finalists**, a proud testament to their commitment towards positive change and environmental stewardship. The Department of Biotechnology warmly congratulates the team on this outstanding achievement and looks forward to their continued contributions toward a sustainable future!



Video Contest at the 80th Annual Session of SLAAS

Mr Nilisha Wijesooriya, one of the students in the Department of Biotechnology (2019/2020 batch), won **first Place** in the video contest conducted in relation to the 80th Annual Session of the Sri Lanka Association for the Advancement of Science (SLAAS). The competition was held at the undergraduate level, under the theme of "Post-Harvest Losses in the Agriculture Sector and its Impact on the Sri Lankan Economy".





Mr Nilisha and his team's video title was "Post-Harvest Losses in Dambulla Dedicated Economic Center", and it highlighted the critical issue of post-harvest losses and their significant effects on Sri Lanka's agricultural economy. Through thoughtful analysis and compelling visuals, the team successfully brought attention to the importance of reducing such losses to improve economic sustainability.

Best Performing Initiative Group President

Tribute 2025 awarding ceremony was organized by AIESEC at the University of Sri Jayawardhanepura. By evaluating the performance of term 24.25, Ms Sakuni Paranavithane, one of the students of the department of Biotechnology (2019/2020 batch), was nominated and awarded as the **Best performing Initiative Group President** (IGP) who holds the Presidentship of AIESEC in Wayamba for the term 2024/2025.





It was awarded in recognition of her unsurpassable dedication, Selfless service and significant performance towards AIESEC at the University of Sri Jayewardenepura for the term 2024/2025.

ZeroPlastic Volunteer Awards 2024

Ms Ushani Nisansala, a student of the Department of Biotechnology (2019/2020 batch), was awarded the Certificate of Excellence at the ZeroPlastic Volunteer Awards 2024, under the Hero Volunteer category, based on her volunteering activities conducted with ZeroPlastic Movement. The awarding ceremony was held on the 2nd of February at Barnhouse, Panadura, honoring individuals for their commitment to environmental sustainability and action against plastic pollution.





Spark 2025 Youth Entrepreneurship Competition

Ms Anuththara Warnakulasooriya, Ms Sakuni Paranavithane, Mr Thejan Jayathilaka, Mr Dumidu Ariyarathne, the students of the Department of Biotechnology (2019/2020 batch), participated in the Spark 2024, Youth Entrepreneurship Competition. The competition was held in two categories: School and Open. Under the open category, out of more than five hundred (500) competitors, **15 finalists** were selected for the final round and this team representing Wayamba University of Sri Lanka, became one of the **15 finalist teams**.



Circularity Challenge 2025

We are proud to share that team PaperHero led by Biotechnology students, including Ms Chathuni Sooriyapperuma (2019/2020 batch) as the leader, with the team members Mr Akeel Shahan, Ms Samanthi Jayakody, and Ms Dehemi Samadhi, has been recognized as one of the **Top 10 Finalists** at the Circularity Challenge 2025, hosted by GapHQ. Competing against over 80 teams, their innovative solution and strong teamwork stood out, reflecting their shared passion for sustainability and circular innovation.



Sports

Celebrating Sporting Excellence: University Colours

We are delighted to share a remarkable set of milestones that several students of the Department of Biotechnology achieved at the 9th Colours Awarding Ceremony, held on 25th March 2025 at the Pandith Amaradewa Memorial Auditorium of Wayamba University of Sri Lanka. The ceremony was held to admire the most outstanding students who demonstrated excellence in sports and contributed to the university's prestige.

Mr Nimesh Dananjana, representing the 2019/2020 batch of the Department of Biotechnology, was honored with the university colours award for his exceptional achievements and leadership in chess. Mr Dananjana served as the vice-captain of the Wayamba University Chess Team (2022/2023) and captain of the Chess Team of the Faculty of Agriculture and Plantation Management (2021–2024).



Mr Kalindu Wickramasinghe, a student of the Department of Biotechnology (2019/2020 batch), received the university colours award to recognize his outstanding performance in track and field at the inter-university Games, 2022.





Mr Chathura Jayathissa, a student of the Department of Biotechnology (2019/2020 batch), received the university colours award for recognizing his outstanding performances at inter-university games in Rugby in 2022 and 2023.

Ms Vihara Dunukebandara, a student of the Department of Biotechnology in the 2019/2020 batch, received the university colours award for recognizing her outstanding performances at inter-university games in track and field (2022) and Elle in 2023/2022.





Mr Ranjakumar Tharshan, a student of the Department of Biotechnology (2019/2020 batch), received the university colours award for recognizing his outstanding performance at inter-university games in Elle for the years 2022/2023. He also served as the Elle captain for the year 2024.

Agri Fellow Cup '24

Ms Ushani Nisansala and Ms Mayurika Karunarathna, who are final-year students of the Department of Biotechnology, were a part of the fourth-year team that became the champions at the Agri Fellow Cup 2024 in carrom, held on 30th of November 2024 at Makandura Premises, Wayamba University of Sri Lanka. Through teamwork, dedication, and strategic play, they secured the championship title, marking a memorable achievement in their university journey.





Mr Nilisha Wijesooriya, a final year Biotechnology specializing student (2019/2020 batch), played for the University Rugby, Kabaddi, and Elle teams, which secured the first place in the Agri Fellow cup 2024 held at Makandura Premises, Wayamba University of Sri Lanka







Latest Biotech Breakthroughs

The World's First De-Extinct Animal: 'Meet the Reborn Dire Wolf'

Colossal Biosciences of Dallas, Texas, has revived the long-extinct dire wolf, using DNA from a 13,000-year-old tooth and a 72,000-year-old skull. Through a powerful combination of ancient DNA reconstruction, cloning, and CRISPR gene editing, the team has successfully birthed three healthy pups: Romulus, Remus, and Khalees.

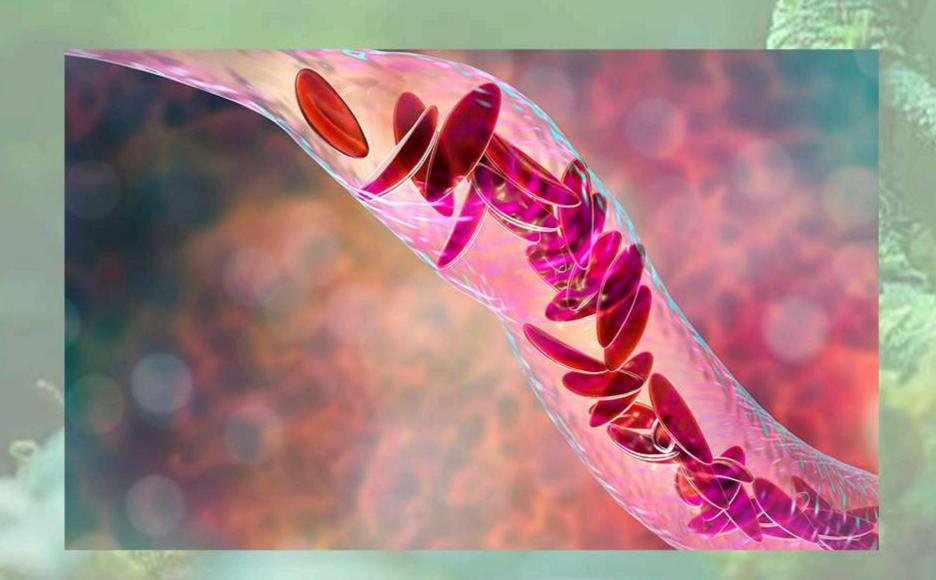
This historic moment not only showcases the power of modern biotechnology but also opens new doors for conservation and ecological restoration. As Colossal leads the way, the future of de-extinction is no longer

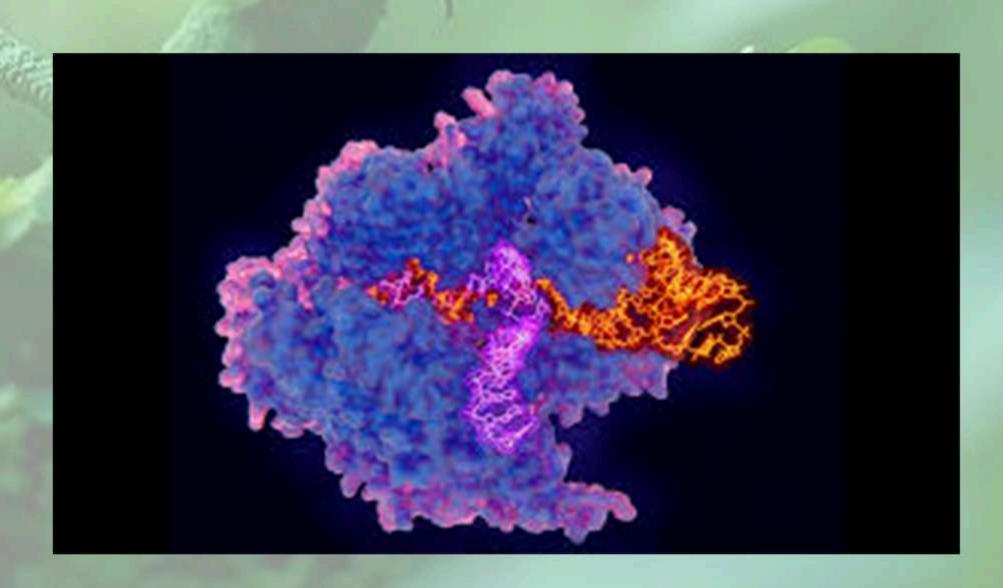


Link: (https://www.biorxiv.org/content/10.1101/2025.04.09.647074.abstract)

World's First CRISPR Medicine for Sickle Cell Disease

CASGEVY, the world's first FDA-approved CRISPR/Cas9 gene therapy for sickle cell disease, marks a revolutionary leap in modern medicine. Offering a one-time, potentially curative treatment, it replaces the need for lifelong transfusions or transplants, transforming lives and redefining what's possible through gene editing.





Link: (https://journals.lww.com/annals-of-medicine-andsurgery/fulltext/2024/08000/revolutionary_breakthrough__fda_approves_casgevy,.40.aspx)

