

Department of Science Newsletter

Issue 1 | March 2025

From the Dean

Important milestones were achieved in the Department in 2024, and I am fully confident that even greater heights will be reached in 2025.

The Department is robust in its approach to learning, teaching and research, as well as community engagements. The comprehensive summary in the newsletter of activities and goals reached so far attests to that academic and student-centred rigour.

Of note is the Department's ability to engage with diverse topics of national and international interest such as planetary sciences, encouraged by the purchase of a sophisticated telescope for space viewing at one end and, on the other, helping to develop a strategic plan for the Sugar Research Institute of Fiji (SRIF).

Staff of the Department of Science are highly regarded in the scientific world with research and publication records second to none. Such leading by example shows that the University of Fiji, though small in size and with resource challenges, is nevertheless able to showcase its scientific talent across the board.

With more interest in a multidisciplinary perspective, especially with other disciplines such as law and education, the Department of Science shows it's a leader in the field in new areas of scientific endeavours such as renewable energy and climate crises. This makes the Department unique as a vehicle for public good efforts through the goals in the University's Strategic Plan 2022-2026.

We look forward to its other innovations in the near future.

Professor Shaista Shameem

FRSA, SJD, PhD, LLM, MA, LLB, BA.

Acting Dean, School of Science and Technology

Vice Chancellor

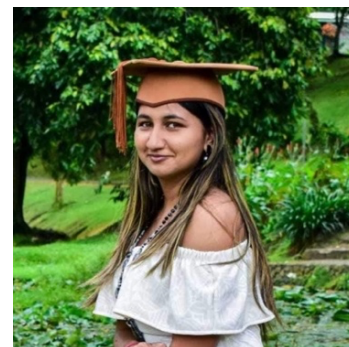
Welcome



We welcome Ms. Keral Sidal, Assistant Lecturer in Science. A former UniFiji student, she returns as an educator with a Bachelor of Science from the University of Fiji and a Master of Science from the University of Southern Queensland, sponsored by Australia Awards. Passionate about teaching and learning, she actively engages in climate

change initiatives and encourages curiosity and critical thinking in her students. Beyond Earth, she is also fascinated by space and eager to explore its scientific wonders. She looks forward to inspiring students and contributing to UniFiji's scientific community.

We welcome Ms. Upashna Anjali Ram, Assistant Lecturer in Environmental Science. She holds a Bachelor's degree in Environmental Science and a Postgraduate Diploma in Climate Change from the University of the South Pacific. Previously



a tutor at USP, she brings valuable teaching experience and student engagement skills. She will teach environmental units, including Biology, Agriculture, and GIS, and is eager to introduce innovative teaching practices. Passionate about sustainability and conservation, she actively participates in climate change initiatives. In her free time, she enjoys reading and exploring new ideas. She looks forward to collaborating with colleagues and contributing to a dynamic learning environment.

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Farewell



In January, the department bid farewell to Mr. Karan Narayan, Project Assistant for the USAID Pacific American Fund (PAF). We sincerely thank him for his invaluable contributions to the Development of Entrepreneurial Skills Post-COVID-19 Through

Rural Aquaculture project, which enhances tilapia and prawn farming in rural communities through training and skills development. His dedication to sustainable practices enriched the project, and we appreciate the knowledge he shared. We wish him all the best in his future endeavors.

Alumni Corner



Shinal Kashmita Singh, an Assistant in New Product Development at Douglas Pharmaceuticals, applies her laboratory skills to work with advanced instruments. Her degree provided a strong foundation, equipping her for research and product

testing. She advises students to manage time effectively and prioritize tasks to stay organized. A career highlight was formulating her first medicine, a significant achievement. Shinal encourages engagement with lecturers and hands-on experiments, emphasizing their value. Having attended mostly online classes during the COVID-19 pandemic, she regrets missing in-person lab experience, which she believes would have enriched her learning.

Student Testimonial

Muni Reddy (20240137) was inspired by her Biology teacher, a UniFiji graduate, to pursue the same path. Now in her second year of a Bachelor of Science in Biology and Chemistry at Saweni campus, she has discovered the vast opportunities in her field.



She finds plant classification fascinating and gram staining in microbiology particularly intriguing. Her passion for microbiology stems from its exploration of diverse microorganisms and its research potential. To overcome challenges, she researches, watches educational videos, and takes notes. Staying organized, she uses her travel time to and from home productively while still enjoying time with friends on campus. She believes improving network reliability for digital learning tools like TopHat and expanding study spaces would enhance the student experience.

News

On January 6, The LAGI 2025 Fiji competition, launching on January 6, invites global innovators, artists, architects, and engineers to design a landmark integrating clean energy and water systems for Marou Village. With a \$200,000 prize pool, the challenge is to create functional art that supports 67 households, promotes sustainable tourism, and harmonizes nature, culture, and innovation. As a nation on the front lines of rising sea levels and water scarcity, Fiji provides a powerful platform for meaningful design. Our HOD, Dr. Ramendra Prasad, will serve as a juror alongside an expert panel. The competition is open until May 5, 2025. Visit the [LAGI 2025 Fiji website](#) to learn more and begin your design.

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On **February 26**, UniFiji and the Sugar Research Institute of Fiji (SRIF) have partnered to advance farming practices and crop quality through scientific research. Formalized by a Memorandum of Understanding (MOU), the collaboration aims to strengthen Fiji's sugar industry through joint workshops, seminars, and conferences.



UniFiji Vice Chancellor, Professor Shaista Shameem, highlighted SRIF's broad mandate covering technical, social, scientific, and commercial aspects of the industry. She emphasized sugar's vital role in Fiji's economy and UniFiji's commitment to supporting farmers, particularly in the western region. She also noted the partnership's benefits for science students, offering research opportunities and internships. SRIF CEO, Dr. Vinesh Kumar, described the collaboration as a milestone in advancing research and innovation, bridging the gap between research and practical application for farmers, millers, and industry stakeholders. The MOU will also support SRIF's five-year strategic plan while providing UniFiji science students with hands-on experience in agricultural research.

Events

Meeting with Professor Toebermann: Jan 23rd

Professor Christian Toebermann from Technische Hochschule Lübeck (Germany) visited the Saweni campus to explore collaboration opportunities. In a meeting with Dr. Ramendra and Dr. Vodo, discussions focused on C₃ESD and the university's Renewable Energy Management program. Key topics included aligning research areas in energy systems, with Prof. Toebermann sharing insights from his work. Both sides identified mutual interests, particularly in energy and battery research, and explored potential joint academic and research initiatives. Both institutions

expressed a strong commitment to future partnerships in these fields.

Meeting with Professor Wairiu: Jan 28th

The department had the privilege of hosting Professor Morgan Wairiu, a distinguished Natural Resource and Climate Adaptation Specialist. With over 30 years of experience, Prof. Wairiu serves as the Pro-Chancellor of the Solomon Islands National University and an Adjunct Professor at UniFiji. During his visit, discussions included the potential for Solomon Islands students to join UniFiji's Renewable Energy Management program and the shared challenges Small Island Developing States (SIDS) face in energy and sustainable development. Both institutions emphasized the importance of collaboration in addressing these issues.

Orientation: Tuesday, Feb 4th



The department hosted a successful welcome event for new undergraduate science students, featuring engaging presentations and activities to introduce them to their academic journey. The session began with a warm welcome from the MC, followed by an address from the HOD and insights from a science alumna. Highlights included discussions on research projects, an introduction to the

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SPASE Club, and guidance on university resources, including social media platforms. Students also received practical briefings, with the event concluding on a high note with an interactive quiz.

Department Lunch: Feb 7th



The department staff enjoyed a lunch at Grace Road in Sabeto. It provided a great opportunity to relax and connect outside the campus before the semester begins. The atmosphere was vibrant, and everyone savored the delicious food. It was a refreshing break, helping us to work effectively together in the months ahead. A heartfelt thank you to all who joined.

Workshop : Feb 24-25th

Our HOD and Ms Keral Sidal participated in the Quality Assurance of the National Energy Information Management System and Energy Statistics Workshop. The workshop aimed to improve the quality and accuracy of national energy data, which is critical for maintaining reliable energy statistics.

Planetary Alignment: Feb 28th

The Saweni Campus hosted a remarkable celestial event, showcasing the rare alignment of all seven planets—Mercury, Venus, Mars, Jupiter, Saturn, Neptune, and Uranus. Organized by SPASE (South Pacific Astronomy Society of Enthusiasts), the event took place from 6:30 PM to 9:30 PM, featuring live telescope viewing. The department provided telescopes, allowing attendees to observe and capture the stunning night sky. A special thanks to astronomy enthusiasts Ellyana Rauicava and Joseph Sanaila Navutu,

who brought a Celestron telescope and traveled from Korolevu, Nadroga, to share their passion for stargazing.



Upcoming

- 31 March: Midsemester break
- 1 April: Field trip- SRIF and FMF Biscuit Company
- 4 April: Graduation
- 18 April: Good Friday
- 19 April: Easter Saturday
- 21 April: Easter Monday
- 12 May: Girit Day
- 26 May: Study Break Begins
- 30 May: Ratu Sir Lala Sukuna Day
- 2 June: Final Examination Begins
- 16 June: Semester 1 Break Begins

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Outreach



The department recently hosted the Climate Change Video Competition, themed Visualizing Climate Change Resilience, Adaptation, and Mitigation in Fiji, showcasing innovative solutions to climate challenges. Kamil Muslim College and Tavua College won the Senior and Junior Categories, respectively. The image at the top features Tavua College, while the one below it shows Votualevu College. Organized in collaboration with the Australian National University and Science Circus Pacific, the competition invited young people to create short videos on localized climate solutions. HOD Dr. Ramendra emphasized its role in raising climate action awareness and empowering youth through creative storytelling, highlighting its contribution to education and a knowledge-based society. Other notable winners included Votualevu College and Vunimoli Islamia College in the Senior Category, and Xavier College and Balata College in the Junior Category.

Prefects Induction at Balata College: Feb 14th



The department HOD, Dr. Ramendra Prasad was the Chief Guest during the Prefects Induction at Balata College, with Ms. Priyatma Singh, Ms. Shirlyn Lata, and Mr. Samlesh Chand serving as Guests of Honour. The ceremony marked the formal induction of the new prefects, highlighting leadership and responsibility in the school community.

Prefects Induction at Pandit Vishnu Deo College: Feb 28th

Dr. Ramendra Prasad was the Chief Guest at the Prefects Induction at Pandit Vishnu Deo College with Ms. Azekah Swamy as the Guest of Honour. This event celebrated the new prefects, emphasizing their important roles in fostering discipline and school spirit.

Spotlight: Microplastics

Rising microplastic contamination in human brains



Microplastics originate from the breakdown of plastic waste and have spread across the globe, reaching even the highest peaks and the deepest ocean trenches. Humans are exposed to these tiny particles through ingestion of food and water, as well as inhalation. A recent study published in *Nature Medicine* reveals a significant increase in microplastic contamination in human brain tissue over the past two decades. Researchers analyzed samples from 1997 to 2024,

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finding a rising trend in micro- and nanoplastics, particularly in the brain, liver, and kidneys.

- Microplastics in the brain: Concentrations were about six times higher in dementia patients, though no causal link was established.
- Prevalent plastic types: Polyethylene, commonly used in plastic bags and packaging, accounted for 75% of detected plastics.
- Health concerns: Microplastics have been linked to strokes, heart attacks, and vascular blockage in animal studies, but their full impact on human health remains unclear.

Ref: Nihart, Alexander J., et al. "Bioaccumulation of microplastics in decedent human brains." *Nature Medicine* (2025): 1-6.

Papers

Vinod, A. D., Prasad, R., Singh, P., Maharaj, R., & Charan, D. (2025). Biofuels for decarbonizing land transport sector: A case study on people's perspective and policy in Fiji. *Renewable Energy*, 240, 122156.

Reyes-García, V., García-del-Amo, D., Álvarez-Fernández, S., Benyei, P., Calvet-Mir, L., Junqueira, A.B., Labeyrie, V., Li, X., Miñarro, S., Porcher, V. and Porcuna-Ferrer, A., 2024. Indigenous Peoples and local communities report ongoing and widespread climate change impacts on local social-ecological systems. *Communications Earth & Environment*, 5(1), p.29.

To suggest a story or other content please email
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