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Current Front Page

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Yes to chocolate, tea, apples and grapes

16 May 2025

We might have another reason to enjoy our daily cup of tea or small piece of dark chocolate, as a new study from the University of Surrey has found that naturally occurring compounds called flavan-3-ols – found in cocoa, tea, apples and grapes – may improve blood pressure and the health of our blood vessels.

The research, published in the European Journal of Preventive Cardiology, analysed data from 145 randomised controlled studies, and found that regular consumption of flavan-3-ols can lead to a reduction in blood pressure readings, particularly in people with elevated or high blood pressure. In some cases, the average blood pressure-lowering effects were comparable to those seen with some medications.

Flavan-3-ols were also found to improve the function of the endothelium – the inner lining of blood vessels – which is crucial for overall cardiovascular health. This improvement occurred independently of blood pressure changes, suggesting a broader positive impact on the circulatory system.

Professor Christian Heiss, lead-author of the study and Professor of Cardiovascular Medicine at the University of Surrey, said:

“The findings are encouraging for those looking for accessible ways to manage their blood pressure and support their heart health through enjoyable dietary changes. Incorporating small amounts of commonly consumed foods like tea, apples, dark chocolate, or cocoa powder into a daily balanced diet could provide beneficial amounts of flavan-3-ols.

“While not a replacement for prescribed medications or medical advice, including more flavan-3-ol-rich foods in a daily routine could be a valuable addition to a healthy lifestyle, especially for those with higher blood pressure. These are findings that, although promising, require ongoing investigation.”

Surrey Uni knows the display way to San Jose

16 May 2025

A radical new approach to display screen technology could halve production costs, reduce harmful waste, and deliver brighter, more energy-efficient screens for our smartphones, smartwatches, and even certain medical devices, say researchers at the University of Surrey.

Most display screens use complex circuits made up of tiny switches called thin-film transistors (TFTs), which control when each pixel turns on or off and how bright it should be. However, building these circuits requires a lot of time, energy, water and harsh chemicals, making the manufacturing process expensive and resource-heavy.

At this year’s Display Week 2025 Technical Symposium in San Jose, California (11-16 May), Dr Radu Sporea and Dr Eva Bestelink will unveil their latest research, based on a new type of electronic component called a multimodal transistor (MMT). Originally designed as a hardware AI computing element, the MMT also has the ability to simplify display circuits while improving performance and sustainability.

Dr Radu Sporea, Associate Professor in Semiconductor Devices at the University of Surrey, said:

“Our invention challenges decades of industry practice by embracing properties usually seen as flaws. In most displays, engineers try to eliminate the energy barriers that form where metals meet semiconductors because they restrict current flow. But instead of working around them, we’ve made those barriers central to how our transistors operate.

“Using these effects deliberately, we’ve shown that the electronic circuits at the heart of display screens can be made with fewer components and processing steps – reducing waste, cutting costs and improving performance. And because it works with existing materials and tools, it’s a smarter, more sustainable upgrade for the screens we use every day. For the user, the reduced power requirements in operation will also mean significantly improved battery life.”

The MMT’s unique operation enables extremely compact, high-performance circuits that are particularly well suited to devices where size, energy use and image quality are critical – such as smartphones, tablets, smartwatches, automotive displays, and future wearable devices.

The technology is already showing promise in simulations, with real-world applications in AMOLED and microLED displays – two of the most advanced and rapidly growing areas of screen technology. It can also be integrated into current production lines with minimal disruption.

Dr Eva Bestelink, Senior Research Fellow at the University of Surrey’s Advanced Technology Institute, said:

“I’ve been working on this technology since my undergraduate days at Surrey, where I had the idea to develop a transistor based on neural behaviour, so seeing it evolve into something with real-world potential is incredibly rewarding. We’ve shown that it’s possible to rethink how displays are built without starting from scratch.

“The MMT lets us design circuits that perform better while also being cleaner and cheaper to make. That’s a win for manufacturers, a win for users and a win for the environment. Beyond displays, it could also have major applications in areas like microfluidics, imaging arrays and hardware AI. We’re still actively researching the AI potential, but the implication for revolutionising manufacturing is clear – especially if we’re to achieve Net Zero.”

Dr Bestelink and Dr Sporea will present their research on 15 and 16 May at this year’s Display Week 2025 Technical Symposium in San Jose, California. Their invention – the multimodal transistor (MMT), now granted a US patent – builds on more than two decades of pioneering research in thin-film electronics at the University of Surrey.

Image: By Redd Angelo in Technology CC0 license

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Surrey SEND parents owed money

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Parents of children with special educational needs who were left with little choice but to use private educational psychologists may be due money back from Surrey County Council.

So far 27 families have been reimbursed for having to go private between the 2023 summer term and May 2024 due to a lack of qualified professionals able to create educational care plans.

This has resulted in £26,475 being returned to families – although it has not been a straightforward process for some parents.

The figures emerged following a recently published complaint against Surrey County Council.

The local government and social care ombudsman upheld that the authority refused to reimburse a mother who used a private educational psychologist in support of her son's education health and care (EHC) needs assessment.

The ombudsman also upheld the council delayed making payments for her son's tutor and that its communications were poor.

The ombudsman upheld further complaints about delays at Surrey County Council in completing needs assessments due to the national shortage of educational psychologists – but that it has since been satisfied with the steps being taken to resolve the issue.

Between the 2023 summer term and May 2024 Surrey County Council said it temporarily agreed to reimburse private reports due to its backlog.

The ombudsman said: "If we were to investigate this complaint it is likely that we would find fault.

"This is because the council accepted that a report from an educational psychologist was required and used the one obtained by Miss X.

"Therefore, it should have reimbursed her for the full costs. Also, when responding to Miss X's complaint, the council accepted there were delays making payments to (the child's) tutors.

"Whilst the council did apologise, this is likely to have caused Miss X distress in the form of uncertainty that wasn't remedied.

"I therefore asked the council to write to Miss X within one month to apologise and to make a payment to her for the full cost of the educational psychologist assessment she obtained and to offer a payment of £100 to remedy the distress its delayed payments to tutors caused her.

"To its credit, the council agreed."

Councillor Clare Curran, cabinet member for children, families and lifelong learning, said she was not able to comment on any individual children specifically, but the council accepted the findings from the ombudsman report and apologised to the family affected for any distress caused.

A spokesperson for the council added: "Where we used the private EP report as the sole advice during that time at the parent/carer's request we would cover the cost.

"However, if we did not use it as the sole advice then we would not reimburse."

They added that authority was now operating at over 90 per cent "timeliness" and able to meet demand.

Image: New Surrey County Council HQ, Woodhatch Place on Cockshot Hill, Reigate. Credit Surrey County Council

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Surrey in race to capture carbon

16 May 2025

A unique carbon capture technology developed by researchers at the University of Surrey could offer a more cost-effective way to remove carbon dioxide (CO_2) from the air and turn it into clean, synthetic fuel.

A study published in Applied Energy demonstrated that the Dual-Function Material (DFM) process – which combines carbon capture and conversion – could match or outperform more established industry methods. Under optimal conditions, it was shown to remove carbon at a cost of US$740 per tonne, with the potential to drop below $400 as materials improve.

Dr Michael Short, Associate Professor of Process Systems Engineering at the University of Surrey and lead author of the study, said:

"For the first time, we've been able to demonstrate it can be financially competitive to use DFMs for direct air capture (DAC) – all the while creating clean fuel like methane in the process.

"Using green hydrogen from renewable electricity and carbon from the atmosphere, our system can help to replace fossil feedstocks in sectors like steel manufacturing. If a steel mill uses this fuel, it could effectively have zero net emissions – offering a sustainable path to decarbonise industries that are otherwise hard to electrify."

Using superstructure optimisation – an advanced modelling technique – the team tested a wide range of configurations to identify the most cost-effective design for capturing 10,000 tonnes of CO_2 per year – a scale comparable to other commercial systems.

With further improvements in material performance and catalyst cost, researchers suggest it could hold promise for large-scale deployment and can be integrated with existing industry infrastructure.

Dr Melis Duyar, Associate Professor in Chemical and Process Engineering at the University of Surrey, said:

"Recycling carbon in this way is a powerful idea, with potential to create many new value chains and enable energy independence by embedding renewable energy into the production of conventional fuels and chemicals."

The Intergovernmental Panel on Climate Change (IPCC) warns that limiting global warming to 1.5°C will require not only cutting emissions but also removing billions of tonnes of CO_2 from the atmosphere this century.

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In the lead up to Net Zero target deadlines, the technology offers a promising and economically viable route to help achieve that goal – while helping us to reduce overreliance on fossil fuels.

Surrey Uni Study: long Covid patients proving their illness is real challenges

16 May 2025

People living with Long Covid often feel dismissed, disbelieved and unsupported by their healthcare providers, according to a new study from the University of Surrey.

The study, which was published in the Journal of Health Psychology, looked at how patients with Long Covid experience their illness. The study found that many patients feel they have to prove their illness is physical to be taken seriously and, as a result, often reject psychological support, fearing it implies their symptoms are “all in the mind”.

Professor Jane Ogden, co-author of the study from the University of Surrey, said:

“We found that the problem isn’t people with Long Covid refusing help – it’s about the deep need for people to be believed. When a patient feels dismissed, offering psychological support instead of medical care can be misconstrued as insulting.”

According to the Office for National Statistics, there are 1.9 million people who live with Long Covid in the UK. Long Covid symptoms include fatigue, difficulty concentrating, muscle aches and shortness of breath, which persist for many weeks, sometimes months, after the initial Covid-19 infection.

Surrey’s study involved in-depth interviews with 14 people in the UK between the ages of 27 to 63 who had experienced Long Covid symptoms for more than four weeks. The group included 12 women and 2 men.

Saara Petker, clinical psychologist, co-author of the study and former PhD student at the University of Surrey, said:

“We found that our participants are living a life of constant uncertainty, struggling to find treatment. People told us that they didn’t feel listened to, some said they’d lost trust in doctors, their social circles and even their own bodies because of the whole experience.

“Medical advice is crucial – but psychological support must be offered with care. If it’s seen as replacing medical help, it can feel dismissive.”

Image: License details Creator: Jose Luis Navarro. Copyright: CC BY-SA 4.0

Surrey leads lateral thinking about vertical farming

16 May 2025

Can vertical farming be the key to improving and safeguarding the United Kingdom’s food system? This is the central question behind a new research project led by the University that has been awarded £1.4 million by UK Research and Innovation (UKRI).

The Vertical Farming to Improve UK Food System Resilience (VF-UKFSR) project will investigate how vertical farming can improve the country’s supply of nutritious leafy greens, essential for a healthy diet.

Vertical farming is a method of growing crops in stacked layers, often indoors, using controlled environments. Unlike traditional farming, it doesn’t rely on soil or natural sunlight. It uses soilless techniques and artificial lighting to create optimal conditions for plant growth. This allows crops to be grown year-round, regardless of weather conditions and makes more efficient use of space and resources.

Dr Zoe M Harris, project lead from the University of Surrey’s Centre for Environment and Sustainability, said:

“Our project is keen to explore how vertical farming can provide local, diverse, and culturally appropriate food, given its potential to grow a wide variety of crops. So far, there’s been little in-depth analysis of the risks to our country’s leafy greens supply nor a thorough examination of the benefits and trade-offs vertical farming could bring to the UK’s food system. Thanks to this grant from UKRI, we’re excited to change that and create a clear roadmap to unlock this potential on a larger scale.”

The research team will work closely with farmers, industry, government and the community to make sure that the outputs of the project focus on real-life and immediate benefits.

The core team is made up of whole-system, environmental and social scientists, UK Urban AgriTech (UKUAT) and five farm partners – Flex Farming, Innovation Agritech Group, Farm Urban, GrowPura, and LettUs Grow.

Dr Lada Timotijevic from the University of Surrey said:

“Our research is all about identifying and understanding the risks to our food system and seeing how vertical farming can help tackle these challenges. We want to create tools that make it easy to see the impact of expanding vertical farming on considerations including food supply, land use, and the environment, so we can make smart decisions for the future.

“We’re also focused on understanding the public’s perceptions of vertical farming and the social conditions needed for vertical farming to succeed, as well as on working closely with farmers, industry, and policymakers to build a roadmap that supports its growth across the UK.”

The project’s leadership team consists of:

- University of Surrey: Dr Zoe M Harris, Dr Lada Timotijevic, Dr Lirong Liu, Dr James Suckling, Dr Damiete Emmanuel-Yusuf

ISSN 2753-2771

- University of Aberdeen: Professor Astley Hastings
- University of Sussex: Dr Alexandra Penn
- UKUAT: Mark Horler

Image: Vertical farm. Credit ifarm.fi Creative Commons Attribution-Share Alike 4.0 International

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Surrey schools not swamped by private VAT escapees

16 May 2025

Figures released by Surrey County Council suggest that state secondary schools admissions have not been overrun with private school pupils after VAT was added to fees by the Labour government.

While critics including Jeremy Hunt MP for Godalming and Ash had predicted up to 90,000 children could swarm the state sector if 20 per cent VAT was thrust on school fees, so far Surrey County Council said it has not impacted applications to join state secondary schools this year.

From January 2025, independent school fees have been slapped with 20 per cent VAT from the Labour government. The controversial policy, aimed at generating £1.5 billion to improve state education, drew up harsh criticisms from local residents. They accused the government of “punishing” hard-working families wanting to invest in their children’s education.

As state school admission results came out last week, it marks the first indicator whether priced-out private school children have spilled over into the state sector. But Clare Curran, county council’s cabinet leader for children, families and lifelong learning, said: “Surrey has not seen a significant rise in the number of applications for a Year 7 state school place for children currently in the independent sector compared to last year.

“For September 2025, 664 on time applications were received from Surrey residents with children in the independent sector, compared to 608 for September 2024, a rise of 56.”

Not a mass exodus of children to the state sector, the policy appears to have not squeezed private schools out of business just yet. Panic over secondary school place shortages has also not materialised in these new figures. Admissions data shows that for Year 7 places there is a mild buffer on the number of families getting their first preference in school places this year.

Cllr Curran said: “While the percentage of applicants offered their first preference school has decreased for September 2025 (80.6%) compared to 2024 (83.1%), the 2025 figure is not dissimilar to the 2023 figure of 81.3%.

“The percentage of applicants offered one of their six preferences for September 2025 was 95.3%, which is comparable with last year’s figure of 95.9%.”

However, it is still early days for the new policy and the ripple effects of the change could have wider implications. The Institute for Fiscal Studies (IFS) said there might not be an immediate effect but the long-term effects could be more significant. The IFS estimated a 3-7 per cent reduction in private school attendance which could require additional £100-£300 million in state funding to manage the overflow within the state school sector.

MPs and educators have raised the alarm that private schools serving students with special educational needs and disabilities should be left out of the VAT tax raid. Sometimes children with an EHCP cannot have their needs met in a regular state school so private school with 1-2-1 support is necessary for their education.

Surrey has around 140 private schools: including primary, secondary and special schools. Fees vary between schools, but the cost of independent education in Surrey is above the national average.

Image: Rosebery School Epsom – Google

Epsom Schools Lead the Way in Pioneering Mobile Phone Pilot

16 May 2025

Glyn School and **Rosebery School** in Epsom are at the forefront of a groundbreaking initiative aimed at tackling smartphone distractions in the classroom. The schools, both part of the GLF multi-academy trust, are participating in a pilot scheme that restricts social media and messaging apps during school hours.

The initiative, which also includes Meridian High School in Croydon and Merstham Park School in Surrey, will see all students in Years 7-9—around 2,300 pupils—install an app called Blackout. This app blocks access to non-essential apps such as social media, games, cameras, and web browsers while still allowing calls, SMS, maps, and calendars. The restriction will only apply during school hours and term time.

Glyn and Rosebery schools, both well-respected within the Epsom community, have been chosen to help test whether this technology can improve student wellbeing and classroom focus. The rise in smartphone usage has been linked to increased anxiety and reduced concentration, and educators are keen to explore solutions that promote healthier digital habits.

A parent at Rosebery School voiced strong support for the initiative, saying: *“Well done to Rosebery and GLF Schools for trialling the Blackout technology. Teachers are on the front line every day, dealing with the disruption caused by smartphones. If this helps students focus and reduces distractions, I’m all for it.”*

The pilot will continue after the February half-term, with students required to install the app if they bring a phone to school. Glyn and Rosebery’s existing phone policies will remain in place, with additional checks to ensure compliance.

Julian Drinkall, CEO of GLF Schools, emphasised the trust’s commitment to exploring new approaches to mobile phone use in education: *“We understand why some schools have introduced outright mobile phone bans, but we believe technology can be part of the solution rather than just a problem. Blackout offers a way*

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to encourage positive digital habits while still allowing essential communication between students and parents.”

Amy Anderson, Headteacher at Meridian High School, echoed this view: *“This pilot allows us to take a more refined approach to phone management. Instead of just confiscating devices, we can use technology to help students engage more fully in their learning environment.”*

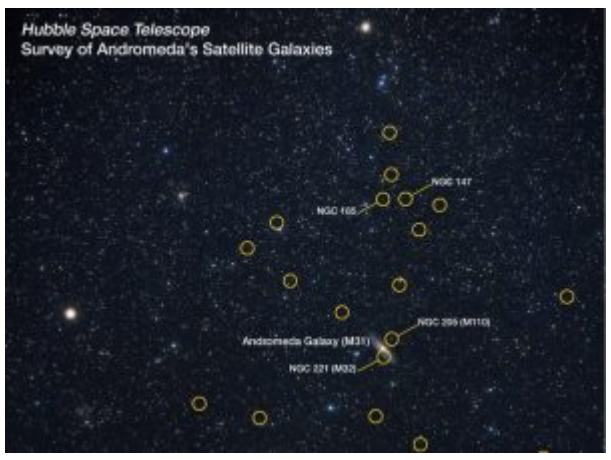
The effectiveness of the trial will be assessed through student, parent, and staff feedback, with key metrics including improved concentration, reduced classroom disruptions, and enhanced student wellbeing. If successful, the initiative could be expanded to more schools in the GLF network and beyond.

Privacy concerns have been addressed, with Blackout confirming that the app does not access personal data such as messages, browser history, or location tracking. It simply blocks non-essential apps during school hours.

Glyn and Rosebery’s participation in this pilot reinforces their reputation as forward-thinking schools, willing to embrace innovative solutions to enhance student learning and wellbeing. As local pupils and parents adjust to the new system, the Epsom community will be watching closely to see if this pioneering approach proves to be the key to a more focused and productive school day.

Surrey University boldy go to the next galaxy

16 May 2025



A collaboration of more than 30 international institutions, including the University of Surrey, has observed vast differences in the dynamic ecosystem of smaller satellite galaxies orbiting our neighbour galaxy, Andromeda. Surveyed using images from over 1,000 Hubble Space Telescope orbits, the findings have given scientists new insights into the evolution of galactic systems.

The study, published in The Astrophysical Journal, found that Andromeda’s satellite system is notably different from our own Milky Way, 2.5 million lightyears apart. While both galaxies are surrounded by a flotilla of smaller dwarf galaxies, Andromeda likely hosts three times as many – offering a rare glimpse into their unique history and formation.

Dr Michelle Collins, Associate Professor at the University of Surrey’s School of Mathematics and Physics and co-author of the study, said:

“What we’ve discovered is that these tiny systems have evolved quite differently from those around the Milky Way. Whether this divergence stems from a massive merger – a slow, gradual collision in Andromeda a few billion years ago – or whether it reflects the natural diversity of the smallest galaxies remains a mystery we’re working to unravel.”

One of the study’s key themes is how Andromeda’s dwarf galaxies have formed and sustained stars in unexpected ways compared to those around the Milky Way. Researchers had long assumed low-mass galaxies would follow similar patterns, but the Andromeda system tells a different story. These satellite galaxies appear to have experienced a more complex evolutionary history, with some continuing to form stars far longer than anticipated.

Lead author of the study, Dr Alessandro Savino, from the University of California, Berkeley, said:

“Star formation really continued to much later times, which is not at all what you would expect for these dwarf galaxies. This doesn’t appear in computer simulations. No one knows what to make of that so far.”

To explore these differences more closely, researchers at the University of Surrey are working to understand the forces driving these unexpected evolutionary patterns. A follow-up study will investigate the mass profiles and dark matter distribution of Andromeda’s satellite galaxies, integrating data from this paper with new observational measurements.

Dr Collins, who will lead the research, said:

“We’ve established that there are clear differences, but what I’m really interested in now is why these differences exist. What factors have shaped Andromeda’s satellites in ways we don’t see in the Milky Way?”

Combining the latest Hubble data with ongoing studies at Surrey, the team plans to gain a deeper understanding of the mechanisms shaping galaxies across the universe. Additionally, Hubble is providing the first set of imaging that allows astronomers to measure the motions of Andromeda’s dwarf galaxies – offering a rare opportunity to track their movements and reconstruct their past interactions.

To find out more, visit the Space Telescope Science Institute’s news page.

Image credit: NASA, ESA, Alessandro Savino (UC Berkeley), Joseph DePasquale (STScI), Akira Fujii DSS2

Nescot Students Celebrate Success at Epsom Downs Ceremony

16 May 2025

Ewell based **Nescot College** students marked the culmination of their hard work earlier this month at the institution’s annual Higher Education (HE) Awards ceremony, held at Epsom Downs Racecourse on 7 February. Around 90 graduands, accompanied by 250 guests, gathered to celebrate their achievements.

The event had a distinct Nescot touch, with students from various disciplines contributing to the proceedings. Travel and Tourism students welcomed attendees, while Music Production students provided DJ sets and live music throughout. Two Performing Arts students delivered solo performances during the formal ceremony, adding a special touch to the occasion.

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Principal Praises Student Achievements

Addressing the graduates, Nescot Principal and CEO, **Julie Kapsalis**, described the event as “a wonderfully uplifting and poignant occasion,” bringing together students of all ages.

“Higher education at Nescot attracts learners from diverse backgrounds, whether school leavers or those returning to education later in life. Many of our students have taken an alternative route to university, using our courses to embark on a new career or reignite a passion for learning. What unites them all is their inspiring journeys of personal and professional transformation,” she said.

Degrees Awarded Across a Range of Subjects

Awards were conferred by Nescot’s university partners, including the University of Greenwich, Kingston University, London South Bank University, The Open University, and the University of West London. Courses spanned subjects such as teacher education, osteopathy, animal management, sports therapy, counselling, healthcare play specialism, business, creative media, public services, and sport and exercise science.

Inspiring Guest Speaker Shares Career Journey

Among the guests of honour was **Dee Mathieson**, Senior Vice President and Managing Director of Elekta, a global leader in medical technology. A former Nescot student, she shared her career journey in the science and medical sector, highlighting her contributions to cancer treatment. Encouraging graduates to seize opportunities, she advised: “Take a chance. If it isn’t the right opportunity, look for another.”

Also in attendance were Cllr **Steve Bridger**, (RA Stamford) Mayor of Epsom & Ewell, **Helen Maguire** MP for Epsom and Ewell, Julie Giles MBE, Chair of Phab, and representatives from the Rotary Clubs of Epsom and Ewell, along with business leaders and other guests.

Annual Awards Recognise Outstanding Students

A number of special awards were presented during the ceremony:

- **The Olatunde Idowu Memorial Prize**, awarded to Holly Stuart for outstanding business awareness.
- **The Richard Maryan Prize**, recognising excellence in osteopathy, awarded to Luke Tanner.
- **The Dr John Osborn Memorial Cup and Prize**, awarded to Michaela Joseph in honour of the late Dr Osborn, who played a key role in Nescot’s HE provision.
- **The Rotary Club of Epsom Raj Amodia Trophy and Prize**, awarded to Spencer Holmes.
- **The Rotary Club of Ewell Cup and Prize**, awarded to pre-degree HE student Jackie O’Connor.
- **The Principal’s Prize**, awarded to Sienna Campbell, selected by Principal Julie Kapsalis.

Honorary Fellowships Recognise Exceptional Contributions

Two Honorary Fellowships were awarded at this year’s ceremony, an accolade introduced in 2023 to mark Nescot’s 70th anniversary.

The first was presented to **Yvonne Spencer**, Director of Science Capability at the Animal & Plant Health Agency (APHA). A former Nescot student, Spencer has been instrumental in developing the college’s Level 6 Degree Apprenticeship in Laboratory Science. Her work has strengthened the partnership between Nescot and APHA, providing career development opportunities for science professionals.

The second fellowship was awarded to **Val Neame**, a former Nescot staff member, in recognition of her 47 years of service to the college. Described as a mentor and friend to many, Neame was praised for her dedication and the lasting impact she has had on both staff and students.

A Student’s Perspective

Delivering the student vote of thanks, Jackie O’Connor, who graduated with a Foundation Degree in Supporting Teaching and Learning, reflected on the encouragement she had received throughout her studies. Paying tribute to her tutor, Mark Warner, she said: “I believe that if you have someone who helps you rethink how you see yourself and how others see you, that is a truly special person.”

A Silver-Rated Institution

Nescot’s Higher Education provision has been recognised with a **Silver rating in the 2023 Teaching Excellence Framework (TEF)**, including Silver ratings in the new categories of Student Experience and Student Outcomes. The accolade highlights the college’s commitment to high-quality teaching and student support.

For more information about Nescot’s university-level courses, visit their website.

Photo: Julie Kapsalis, Principal and CEO with Nescot Class of 2024 graduates at the HE Graduation Ceremony held at Epsom Downs Racecourse