



NEWSLETTER

Welcome to the School of Computing,
Engineering and the Built Environment's
Winter newsletter

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Edinburgh Napier
UNIVERSITY



School of Computing,
Engineering & the
Built Environment

Introduction

Dear Reader

I would like to welcome you to our first edition of the School of Computing, Engineering and the Built Environment (SCEBE) Newsletter. We hope you enjoy reading all about our success and highlights over the past year.

The School of Computing, Engineering and the Built Environment (SCEBE) is the engine of research and industry engagement within Edinburgh Napier University with around 4,000 students. We are the third best university in Scotland for research power in Computer Science across all universities. We have the best Mechanical Engineering programme in Scotland according to the 2024 student satisfaction survey. We have one of the largest programmes in Computer Science and Built Environment in Scotland in terms of student numbers. We engage with over 100 companies every year through student placements, research collaborations, consultancy work, CPD and graduate apprenticeship training. We regularly generate spin-out companies in technology areas, some of which have become world leaders in their area, for example Cyacomb in digital forensics. Our five subject groups, Applied Informatics, Built Environment, Computer Science, Cyber Security and Systems Engineering, Engineering and Mathematics, work closely and engage with our industry partners. Our industry partners also contribute to our Industry Advisory Board developing relationships which support our student and research. We aim to expand our research and industry engagement, while growing our teaching programmes delivering an excellent student experience.

I would like to take this opportunity to thank all our external partners and stakeholders for your support and engagement throughout the year and look forward to continued collaboration in 2025.

Professor Peter Andras

Dean of the School of Computing, Engineering and the Built Environment (SCEBE)
Edinburgh Napier University

After the success of the 2024 SCEBE Exhibition 'Powered by AI', we are delighted to confirm the return of the Exhibition in May 2025. The theme is 'Sustainability' and exhibits are now being assembled. As ever, the Exhibition will be a hands-on, come and see, learning experience showcasing all that is special about how we teach and research sustainability. You can expect to discover more about timber as a resource and as a construction material, to see da Vinci, the unpinned self-build timber bridge. Is this Jenga in reverse? How the robot dogs are being redeployed to help ecologists monitor the natural environment. Through our spinout company Mercel, the great strides we have made in the eco-friendly production of nano-cellulose as key to the reduction of plastic packaging. Electric battery manufacture using cellulose from water hyacinth, the latter being southeast Asia's version of Japanese knotweed. Material composites from fungi. Or solar PV cells' performance improved using dye from mushrooms. Do come along to the Glassroom on the 15th May 2025, for all this and more.

With warm wishes from everyone at SCEBE for the festive season.



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The research within the Applied Informatics group is broad and world leading. These include Assistive and Inclusive Technologies, Communities and Creative practices, Digital Media, Experience Design, Education and Widening Participation, Human-Computer Interaction, Human-Robot Interaction, Responsible AI, Participation, Social Informatics, Sound Design, User Experience.

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The Built Environment group delivers world-class research in Sustainability, Architecture, surveying, and Civil Engineering. Our research projects span various areas, including sustainable design, digital construction technologies, timber engineering, smart cities, net Zero, building performance analysis, as well as, structural, environmental, hydraulic, geotechnical and transportation engineering.

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The Computer Science group delivers world-class research and enterprise in the areas of artificial intelligence, data science and visualisation, games development and software engineering. We are committed to driving new theory and its development into technology, while ensuring that this can be readily applied to solving the most pressing real-world problems.

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The Cybersecurity and Systems Engineering group includes expertise in complex system design and implementation, underpinned by rigorous scientific evaluation. We have expertise in many areas from electronic circuits and sensing through to large Internet-scale infrastructures. Our Cybersecurity work focuses on testing the security of these systems, developing methods for defending and protecting them, and investigating incidents (and responses) when they do occur.

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The Engineering and Mathematics group has a strong research expertise in energy, materials & manufacturing, mechanical & design, mathematics & modelling, automation & robotics, and operations & production management. Our students focus on engineering practices, computing skills and principles of design relating to a wide range of mechanical and energy systems

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1. Applied Informatics

This academic year we're focusing on three main areas in Applied Informatics - our students, ensuring we're equipping them with cutting edge skills; our industry partners, fostering meaningful collaborations; and driving impactful research. As we approach the mid-point of the academic year, we're excited to share some highlights and developments:

Shaping the Future Workforce: Our programmes and IAB continue to strengthen industry engagement. Ella Taylor-Smith identified gaps in inclusion training for workplace mentors and collaborated with digital media students to create the [Workplace Mentor Training for Inclusion](#) resource. We thank industry partners for shaping our MSc Information Science programme, while efforts progress to launch an on-campus MSc Sound Design, a new MSc Immersive Experiences, and international collaborations, including a partnership with ANT1 in Greece.

Research Excellence and Grant Successes: There have been a large number of publications, conference presentations, workshops and funding successes, here are a few to provide an insight into some of our work:

- **Iain McGregor and Callum Goddard** have been awarded a prestigious UKRI grant for their project, [Project Maestro - AI Musical Analysis Platform](#). This innovative initiative aims to revolutionize the analysis of musical compositions using AI.
- **Hanne Wagner** secured funding from the Scottish Graduate School for Arts & Humanities for her project, [Spring into Methods - A playful approach to exploring evidence-based policy impact](#).
- **Debbie Meharg, Iain McGregor, Iain Donald, Dimitri Darzentas, Fiona Stewart and Hanne Wagner** secured funding from the Royal Academy of Engineering Diversity Impact Programme

Showcasing Research on the Global Stage: **Jon Mortimer** was invited to Burbank, California, to present at the [Creative Talent Network](#) Animation Expo. His animated short film, which summarizes his research paper in a format accessible to sign language users, was well-received. Watch the animated videos in [BSL](#) and [ASL](#).

Engaging the Next Generation through STEM Outreach: Our **Library of Inspiration** initiative has successfully launched across four high schools: Gracemount, Tynecastle, Dunfermline, and Whitburn. So far, over 150 pupils—including 110 girls—have participated. The project features 10 engaging kits, enabling hands-on learning and sparking interest in STEM fields. Learn more about the initiative at blogs.napier.ac.uk/libraryofinspiration.



Looking Ahead: As we continue into 2025, we remain committed to strengthening our relationships with industry. Whether through tailored partnerships, collaborative research, or shaping the future workforce, we're here to work with you.

2. Built Environment

The **first bamboo-timber composite grid shell** structure of its kind was built in Guangxi with the help of 13 students from ENU, led by Professor Johnson Zhang, working alongside counterparts from Guangxi University of Science and Technology and Inner Mongolia University of Science and Technology, supported by the Turing Scheme.

The Built Environment team also organised five international trips this year of which three were funded by the Turing Mobility Scheme. The first trip was led by Dr Inji Kenawy, Head of the Built Environment as an opportunity for our students to attend the Green.Building.Solutions (GBS) Summer University in Vienna. The Second trip was led by Dr Cletus Moobela to Ghana, and the third trip was led by Dr Aikaterini Marinelli to Turkey. Additionally, Dr Suha Jaradat and Dr Mark Taylor also led the annual trips organised to Dubai and ICW participation in Amsterdam respectively.

Professor Robert Hairstans and Dr Dan Ridley-Ellis were heavily involved in determining the priorities and issues, and assisting with the drafting of the new strategy for the future of timber construction, published by the UK Government: [New 'timber construction roadmap' published with help of Edinburgh Napier expertise.](#)

The Built Environment group hosted the first-of-its-kind networking event for Women Architectural Technologists in Scotland, organised by Dr Inji Kenawy in collaboration with the CIAT Scotland East Region, Equate Scotland, and Robert Gordon University.

The 4th Transdisciplinary Workplace Research Network conference TWR2024 and the 20th conference of Northern European Network for Wood Science and Engineering were hosted in September 2024 by Dr Andrew Smith and October 2024 by Dr Daniel Ridley respectively. Each event welcomed more than 100 delegates from all over the world.

Accreditation Updates for this academic year:

- The renewal for six of the Civil Engineering and Civil & Transportation Engineering programmes was successfully completed by JBM.
- The renewal for the Accredited Centre Status and the BSc (Hons) Architectural Technology & BSc (Hons) Construction and the Built Environment (Architectural Technology) Graduate Apprenticeship by the Chartered Institute of Architectural Technologists (CIAT) has been successfully completed. The renewal for our Accredited Centre Status and BSc (Hons) Architectural Technology programme by The Chartered Institute of Building (CIOB) has also been approved.

Staff news:

- Professor Robert Hairstans was named **Pioneer of the Year at the 2024 Offsite Awards**. As well as his role as Professor of offsite and industrialised construction, he is the founding Director of the Centre for Advanced **Timber** Technology at the **New Model Institute for Technology & Engineering (NMITE)**. The partnership between ENU and NMITE has drawn particular praise from industry and government for its part in developing innovation in timber construction.
- Associate Professor **Suha Jaradat** was shortlisted for Most Innovative Teacher of the Year in the latest Times Higher Education Awards. Read the full article [here](#).
- Chrysoula Panti was shortlisted for the award for “Significant Commitment to Sustainability” and received the “Best Lecturer” Award in SCEBE of which she received for a second year in a row.

3. Computer Science

There were a number of funding successes during the year: for example, **Dr Amjad Ullah** is leading work in a European Project called [SwarmChestrate](http://www.swarmchestrate.eu) (www.swarmchestrate.eu) which aims to combine emerging technologies in the domains of Swarm computing, distributed AI, distributed ledger systems and decentralised identity management to create a completely decentralised autonomous and self-organised application management system which supports the processing of large amounts of data generated at the network edges with the help of hyper-distributed and complex applications in the Cloud-to-Edge continuum. **Dr Yanchao Yu** won a large award from EPSRC to conduct a research programme on the topic: Learning From Collaborative Storytelling: Enhancing Visual Scene Understanding Through Human-Robot Interaction. **Dr Léni Le Goff** won funding from the Carnegie Trust for the project Autonomous Quadrupedal Robots: Adaptable To The Unpredictable.

- **Prof Kenny Mitchell** received a service award for ACM SIGGRAPH Conference Advisory Group external representative which marks the end of an extended 2-year term helping the Graphics and Interactive Techniques community decide contracts, locations, chairs for SIGGRAPH for the largest, most prestigious graphics venue. Prof. Mitchell was also appointed as an ACM Distinguished Speaker for a term of 3 years.
- Staff were successful in winning awards at international conferences: **Dr Dimitra Gkatzia** and her team won the Best Paper Award at the International Conference on Natural Language Generation 2024 (Tokyo) while **Dr Quentin Renau** won the Best Poster Award at the Parallel Problem Solving from Nature conference in Austria.
- CS members hosted the 7th International Conference on Information Science and Systems (ICISS 2024) on 14-16 August 2024 at Edinburgh successfully, **Xiaodong Liu** as the general chair, **Amjad Ullah** and **Christos Chrysoulas** as the organisation chairs.
- ENU has been selected by the UK Workshop in Computational Intelligence to run the 24th edition of this workshop at ENU on 3rd-5th September 2025. Contact ukci@napier.ac.uk for more information.
- Edinburgh Napier University is excited to host the **PlusEquals5**: Future Software Engineering conference on 17th April 2025 at its Craiglockhart Campus. Contact plusequals5@napier.ac.uk for more information.
- **International Keynote talks**: **Prof Emma Hart** gave an invited keynote at the Engineering Applications of Neural Networks conference, Corfu on Evolutionary Robotics. in July 2024; **Prof Kenny Mitchell** gave a keynote talk on Game Rendering Technology for Huawei's Global Software Technology Summit in Dublin on 4th July 2024.

4. Cyber Security and Systems Engineering

The group remained exceptionally active and advanced our efforts towards meeting the IET accreditation requirements. Notably, for the first time, we hosted prestigious International Academic Conferences such as IFIP SEC 2024 and Computer Science 2024. These events attracted academics and research students from around the world to our campus, fostering fruitful collaborations for the future. Our research footprint continues to expand, a fact underscored by recent promotion results. The hard work of many colleagues was formally recognised, with several being awarded ranks from Associate Professor up to full Professorship. Success in securing EU and KTP projects has enriched our pool of active projects and enhanced our visibility within the research community.

Bill Buchanan won the “Most Innovative Teacher of the Year” award at the Times Higher Education Awards (“the Oscars of Higher Education”). In April 2024, Professor Bill Buchanan was elected as a Fellow of the Royal Society of Edinburgh [\[here\]](#).

Libu Manjakkal was named as the Global Winner of the 2024 RINENG (Results in Engineering) Young Investigator Award. This award focuses on early and mid-career independent researchers who have demonstrated outstanding research performance across various fields of Engineering, including Aerospace, Bioengineering, Chemical, Materials, Civil and Environmental, Electrical, Energy, Industrial and Manufacturing, and Mechanical. Libu Manjakkal was also the [Shortlisted Candidate 2024 Journal of Materials Chemistry Lectureship by Royal society of Chemistry](#).

Naghmeh Moradpoor gained her Senior Member of IEEE (SMIEEE) status. **Thomas Tan** was appointed as an Associate Editor for the IEEE Open Journal of Computer Society in Feb. 2024.

Chan Hwang See was elected to URSI - Commission K: Electromagnetics in Biology and Medicine, Official Members, as the UK representative.

Shalu Maden - a graduate of the Cybersecurity and Forensics programme - won the Outstanding Contribution from a University Student award at The Herald Higher Education Awards. At the same event, the university also received the “University of the Year” award and was included in seven categories [\[here\]](#).

Rich Macfarlane picked up the Gold Award for an NCSC Academic Centre of Excellence in Cybersecurity Education [\[here\]](#).

IEEE Communication Society Student Competition Award

PhD Students, Kubra Duran, Lal Verda Çakir and Yagmur Yigit were selected as recipients of The Honorary Mention Award for the 2023 IEEE Communications Society Student Competition. It was a very selective process, among 100+ applications, to first shortlisted to 20 and then further down. Our group was one of the finalists. This Award is given to our project “Sustainable and Breathable Buildings: Proof of Concept Digital Twin for Improved Indoor Air Quality and Energy-Efficient Ventilation”, which we built on our very own “Digital Twin as a Service (DTaaS) Platform”.

5. Engineering and Mathematics

The group maintained an exceptionally active profile this year, achieving significant milestones across various domains. Our programmes met IET, Energy Institute and IOM3 accreditation requirements.

A highlight of the year was hosting 4th Annual Solar & Wind Power Conference. This event drew academics and research students from around the world to our campus, fostering new collaborations and strengthening our global connections. The 5th Annual Solar & Wind Power Conference will take place at our Merchiston campus on 11th-13th June 2025. See [blog](#) for more details.

Our research footprint continues to grow, as evidenced by recent promotions, with several colleagues advancing to roles ranging from Associate Professor to Professorship. This recognition reflects the dedication and excellence of our team.

Additionally, success in securing EPSRC, Innovate UK and British Council projects has enriched our portfolio of active initiatives, boosting our visibility and impact within the research community. Dr Chennakesava Kadapa has successfully captured an EPSRC grant in Soft Robotics as the lead PI. The project collaborates research with MIT, Swansea University.

Dr Firdaus Muhammad Sukki was awarded funding as a subcontractor on Ligna Alba's Innovate UK-funded project, "An Innovative 'Passive-Solar' Timber Drying Kiln."

Dr Firdaus Muhammad Sukki was awarded a British Council funded grant for the project entitled "Accelerating Transformative Technology for Sustainable Clean Energy Development (ASCEND)".

Mustafiz Shaikh, a PhD student under the supervision of Prof. Islam Shyha, Dr Fadi Kahwash and Dr Neil Shearer, was awarded the second prize in the Scottish heats for the [IOM3 \(Institute of Materials, Minerals & Mining\)](#) Young Person's Lecture Competition.

Prof Islam Shyha and **Dr Suha Jaradat**, from the Built Environment subject group, participated in launching the first Innovative Energy Harvesting Net Zero Green Room at the Kuwait College of Science and Technology (KCST). The event was attended by KCST's President, the British Ambassador, the Australian Ambassador, and several representatives from Kuwaiti higher education institutions.

Dr Pablo Sola became a member of the **UK Sustainable Electrification Forum**. This is a meeting of an expert group with the aim of establishing an expert voice on some of the under-represented challenges and risks that will come from electrification. The group discusses the current challenges and risks and how best to articulate these to decision makers

Dr Adelaide Marzano delivered the first cohort of the CPD course on Lean Six Sigma YELLOW BELT on the 26th-27th August 2024. Edinburgh Napier University is accredited body by the Institution of Six Sigma Professionals. 6 delegates successfully awarded the YELLOW BELT certificate!

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