# Dyson Institute of Engineering and Technology

## Annual Impact Report – 2024/2025

dyson
institute of
engineering+
technology

# 2024/25 an overview

Reflections on the year from Interim Director, Bob Tricklebank



This year has been another highly positive and transformative period for the Dyson Institute, as we continue to strengthen our position as an exemplar of work-based learning. Dyson's organisational changes have influenced the way we have gone about delivering our strategic direction, and we have responded by evolving our academic offer, delivery models, and organisation. The transition to an MEng programme allows the qualification from our flagship programme to compare directly with other high-quality institutions, while the introduction of an MSc in Software Engineering marked our first—and, for now, final—year of postgraduate provision in this topic area. Although this programme is mothballed, we are excited to see these students graduate and launch into impactful roles aligned with Dyson's business needs in 2026. Alongside this, we have taken steps towards providing tailored, academically rigorous, learning opportunities for Dyson engineers, reinforcing our role as a strategic partner in talent development.

The Institute has maintained full compliance with all regulatory bodies and achieved several record-breaking outcomes: a record number of first-class degrees and apprenticeship distinctions, and an unprecedented 84% of students undertaking international missions, reflecting the global nature of Dyson's engineering challenges. We received a record number of undergraduate applications and met all access and diversity targets, ensuring diversity in Dyson's talent pipelines. Feedback on our postgraduate students has been overwhelmingly positive, particularly regarding their maturity and professionalism.

We have tested new online delivery models to extend global reach and continued to align Institute processes with Dyson's operational frameworks. This year also culminated in a significant milestone: The first independent graduation of Dyson Institute students, underscoring our maturity as a higher education provider.

Our students have contributed to Dyson's media and PR activities , partnered with the James Dyson Foundation and Dyson Farming, and engaged in projects that align closely with Dyson's innovation priorities. Collectively, these achievements demonstrate the Institute's growing impact on Dyson, our students, and the wider engineering profession.

# Key data 2024/25


**168**

Undergraduate students
32% female

**17**

Postgraduate students from a diverse range of undergraduate studies.
41% female

**181**

Graduates from the Institute since 2017

**7**

Award wins or final shortlists across students, staff, graduates and institution.

**34**

Graduating students in 2025 with 32 moving onto missions in the Dyson business

**1263**

Applications in 2025
(36% increase vs 2024)

# Progress and impact of current students

September 2024 intake (MEng and MSc) with Jake and James

# Retention, progression and completion

Students are performing very well academically and make smooth progression through the programme. They are also making valuable contributions to Dyson technology through their placements across the business in the UK and Singapore.

## Taught Programme

Students continue to succeed on the taught programme thanks to their hard work and dedication as well as the support offered by a committed team and the rigorous admissions process. All students are expected to progress to the next level of learning.

All students in the final year of study completed their degree with the outstanding results that 94% of the students achieved a first-class degree classification. At the Institute we are assured, through the robustness of our processes and external examiner comments, that this reflects the dedication and ability of the graduating cohort.

After completion of the academic programme the graduating cohort also took the End Point Assessment (EPA) for the apprenticeship elements of their qualification. EPA is assessed independently with external experts coming onto site to assess the students. 2025 saw our highest ever success with over 90% students achieving the highest grade of distinction.

Fig. students receiving their final degree classifications

## Workplace

Undergraduate rotations at the Dyson Institute have delivered real contributions to Dyson's technology development pipeline.

- In software engineering, students resolved embedded software versioning issues, ensuring accurate system identification across product variants without compromising functionality.
- In NPI Beauty, undergraduates redesigned a cleaning tool for next-generation products, applying user insights, rapid prototyping, and sustainable material choices to deliver a solution that will accompany the product into production.
- In electronics research, students designed, fabricated, and assembled a heater control PCB to investigate flicker, demonstrating proficiency in schematic modification, PCB layout, and structured testing, while producing documentation to enable future high-voltage validation.
- In Environmental Control (EC) NPI, students advanced humidification technology by developing and testing two functional rigs, addressing key challenges such as limescale build-up, white dust emission, and airflow optimization.

These projects show that our undergraduates do not just learn from their colleagues in engineering but are also able to contribute meaningfully to Dyson technologies and products.

# Undergraduate impact case studies

In 2024/25 many of our students have worked on high impact projects presenting to senior stakeholders including James and Jake Dyson.

Below are three case studies from our graduating cohort, who won prizes at the 2025 graduation.

**Sustainability prize**
Rosalyn

*“The winner of the sustainability prize has delivered something that Dyson has never managed to do at scale before. They gathered and analysed vast amounts of data from 400 different samples to support better predication of battery run time. This has the potential to reduce the number of good, reusable batteries ending up in waste.”*

**Project impact prize**
Eden

*“The winner of this year’s project impact prize has made a significant and lasting impact on the development of a new product. In particular, they developed, designed and commissioned a testing rig to measure performance swiftly and reliably. This enabled the project to pass important development milestones, taking the project closer to production.”*

**Innovation prize**
Ethan

*The invention prize focuses on an innovation, technology or patent that a student has led, or has been a key contributor for. The winner this year lead on the idea to transfer product settings between users in an image format, a concept with immense commercial potential and implementation in our devices.*

# 2025 Admissions

Through consultation with the business the Institute was aiming for a cohort of 30-35 students that meet our access aspirations (40% women, 30% for a minority ethnic group and 25% from a low socio-economic background). In 2025 we recruited 33 students, it is the first time the Institute has met all our access aspirations

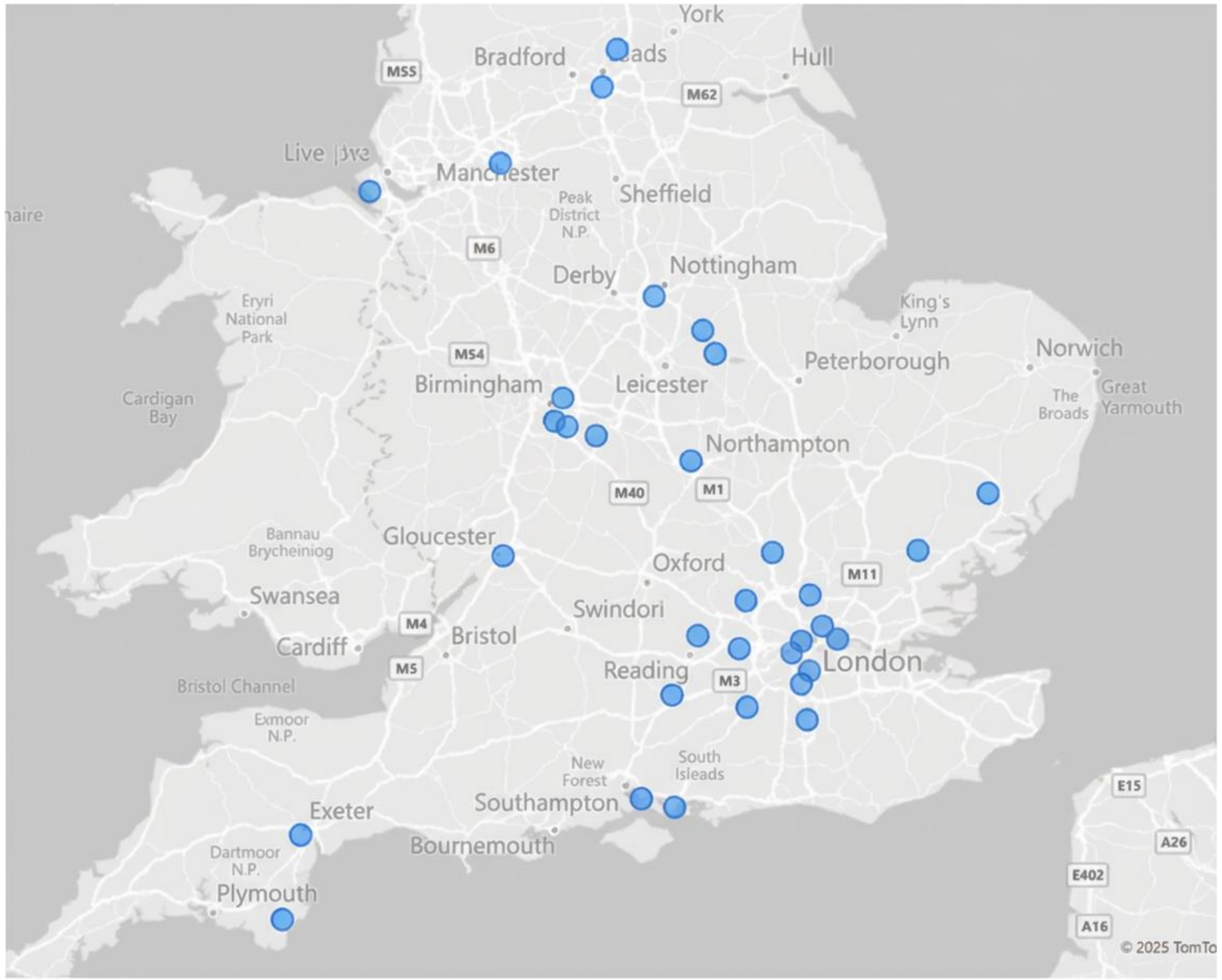



Fig: Approximate geographical distribution of 2025 cohort


Fig: 2025 new joiners at the Cotswold lakes for a community building event in September & Student Support Advisor, Imy Sharman, talking to offer holders and families at pre joining day

| Year | Number of joiners | Female (%) | Minority Ethnic Background (%) | Low Socio-Economic Background (%) |
|---|---|---|---|---|
| 2025 | 33 | 42 | 33 | 32 |
| 2024 | 47 | 28 | 32 | 15 |

Fig: Diversity of 2025 and 2024 cohort against the Dyson Institute access aspirations

# Impact of graduates

2024 graduates with James and Jake Dyson in front of the hangars at Hullavington

# Graduate overview 2025

The multidisciplined skills offered by our graduates is in demand and they are leading new and complex products and technologies. The graduate overview provided focuses on 2022 graduates who have now been in the business for three years.


Fig: (clockwise) Class of 2022 graduates with James Dyson (2022); Theo Jones at launch of Dyson Zone in Seoul; Katherine Magowan at consumer launch of Dyson Supersonic r at Paris Fashion week

## Overview

The Dyson Institute has graduated 181 students including those that graduated in September 2025. Our first graduates have now been in the Dyson business for four years post-graduation, our 2024 graduates are coming towards the end of their transition year and 2025 graduates started their graduate transition year in October 2025.

## Graduate impact

Feedback from Dyson Institute graduates (2022) shows that the projects they have undertaken span a wide range of disciplines including design engineering, software development, strategy, user experience, fluid dynamics, and commercial roles. Many individuals have contributed to high-impact initiatives such as pioneering new technologies, leading product development through critical milestones, and supporting global launches. Their work has involved hands-on rig development, data analysis, stakeholder engagement, and cross-functional collaboration. Several cohort members have taken ownership of complex deliverables, led reviews with senior stakeholders, and driven innovation in areas like automation, sustainability, and user experience.

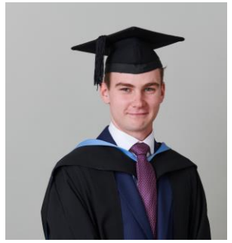
The impact of their work is evident in the strategic value they've added – whether through refining product propositions, improving manufacturing processes, or enhancing user-centric design. They've helped accelerate project timelines, improve product performance, and strengthen Dyson's competitive positioning. Many have demonstrated leadership by proactively solving problems, mentoring others, and driving initiatives that align with Dyson's values. Their contributions have not only delivered tangible business outcomes but also laid the foundation for future innovation and growth across multiple categories and geographies.

In addition to the case studies on the next page, there are notable examples of Institute graduates contributing beyond the level expected for someone at their career stage:

- One graduate developed data management and visualisation tools used to present market data and enhance decision making at the July strategy board.
- Another graduate took a lead role in a product's development, first as project manager and then design manager, passing seven milestones with no failures. This graduate went from one of the more junior members to the "go to" person for his team within six months. This highlights the adaptability and learning agility of Institute graduates.

In total, Class of 2022 graduates are named as inventor on 24 patent applications which compares favourably against Class of 2021 (14 patent applications) at the same point in their career.

# Graduate impact case studies
# 2022 graduates



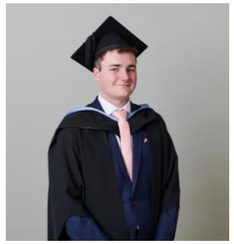
## Ethan
Product Technical Lead

Ethan took responsibility for redesigning and specifying the RDD space as part of Dyson's £200 million investment into a new campus in the Phillipines. He managed stakeholders across the business from lab owners to estates directors to robustly define requirements and ensure that the built facility met the needs of the RDD business. The impact of this contribution is that RDD labs were fit for purpose and ready for teams to use immediately upon moving in.

Reflecting on this project Ethan felt his broad engineering exposure through the undergraduate programme (mechanics, electronics and software) allowed him to understand stakeholder requirements, bring disparate teams together and speak a common engineering language.

**Airwrap id – Technical Leadership in Product Development**
Ethan was responsible for managing and communicating all the technical risks and issues as the product went from the “target set” milestone to start of production.

He led technical reviews of 100+ engineers to ensure risks were understood and mitigated across teams. He was asked to take this role due to his technical breadth and ability to understand the bigger picture thanks to his work on the Philippines campus. Ethan reflected that in this more technical role he utilised academic understanding built through the course and used his network of undergraduates.



## Harvey
Senior Software Engineer

Harvey transferred into New Product Innovation (NPI) in the new spaces category in June 2024. By May the team had successfully passed the Proof-of-Concept milestone. Notably, the product had lacked a vision system until Harvey's involvement. His ability to integrate hardware and software was critical, and within just seven months, the team moved from having no vision capability to an integrated rig, in large parts due to Harvey’s leadership and technical expertise.

Harvey's familiarity with working across teams (from undergraduate rotations) allowed him to make an impact quickly. He collaborated with research teams to establish new ways of working between NPI, Research and development teams, acting as a translator. His technical fluency and design understanding facilitated smoother integration and accelerated progress. Harvey's downstream experience also proved invaluable, enabling him to structure software in a way that allowed for faster transfer and implementation.

Harvey also played a central role in “Discovery Days,” where he led project reviews with both the CEO and James Dyson. He led design reviews with the Chief Innovation Officer, communicating complicated technical concepts and risks clearly to enable to project to progress.

Harvey's broad experience across disciplines enabled him to bridge gaps in understanding and manage cross-functional collaboration with confidence.

## Tash
Acoustics Research Engineer

Following graduation, Tash commenced a transition year in Singapore within the wearables technical development team, later moving into acoustics during the launch phase of Dyson Zone. A critical issue arose when products failed to meet acoustic specifications after shipping tests. While the team pursued complex simulations, Tash proposed a simple, rapid validation method and this pragmatic approach disproved the initial hypothesis, redirected focus to vibration issues, and prevented delays to product launch.

Subsequent roles included NPI Sustainability, where Tash evaluated repairability and end-of-life strategies for Environmental Control (EC) products. Her analysis demonstrated that replacing adhesive with mechanical fasteners could reduce costs while improving rework and refurbishment capability.

Returning to the UK, Tash joined the Home Research team, contributing to aero, turbo, and thermodynamic research, including fundamental studies on turbulence and compressor noise. In 2025, they managed an undergraduate to deliver a project through 3 milestones, something many felt would not be possible with an early career undergraduate. This project delivered insights into product performance and prevented wasted effort on an unfeasible concept, saving substantial engineering time.

Additional contributions include aeroacoustic redesigns for the next EC product to meet EU compliance rules and taking on the role of leading user experience trials for future EC projects, once again showing Institute graduates adaptability and willingness to explore new challenges.

# 2025 graduate mission locations

This year over 200 graduate missions were proposed by the Dyson business for the 34 graduates, showing significant demand for their skills


- 79% outside of the UK
- 70% based in South East Asia
- 52 missions across the year in total

# Institutional Impact

The academic year 2024/25 has seen our first independent graduation, the recruitment to our first modules for Dyson people, an increase in external engagement through conferences and research, and our team continuing their development and winning awards.

# Institutional impact for Dyson

2025 has seen the Institute increase support for learning and development across Dyson technology with the launch of two pilot modules for Dyson people and support for an AI course in partnership with Dyson HR.

## Overview

In 2025 the Institute has had impact cross the Dyson business and externally beyond the impact that our graduates continue to have. This includes hosting academic conferences, inviting policy makers from the US and launching our first short courses for Dyson people.

## Short courses

In July, the Dyson Institute launched two modules in engineering systems for Dyson people. These modules were launched as pilots to assess uptake and impact. The modules (Engineering systems requirements, statistical modelling and data analysis) launched via Dyson's intranet, emails to eligible staff and information calls available to staff globally.


Prospective applicants were encouraged to register their interest before completing an application. Those eligible were then invited to a motivational interview to understand how the content would be useful to them in their roles and how they would balance the time commitment of the course.

In total the Institute received approximately 160 applications for the 60 spaces available. There was also significant interest from engineers across the business that were not eligible.

The distribution of students selected for the programme is shown in the table below. Over 70% of students are based outside of the UK, joining from the Singapore, Malaysia, and the Philippines. We also received further applications from USA and China.

| Module | Singapore | Malaysia | Philippines | UK |
|---|---|---|---|---|
| Systems Requirements | 12 | 11 | 7 | 13 |
| Data analysis | 11 | 4 | 4 | 7 |

Fig. Offer holder locations for short course modules

Employees holding offers started their studies in October.

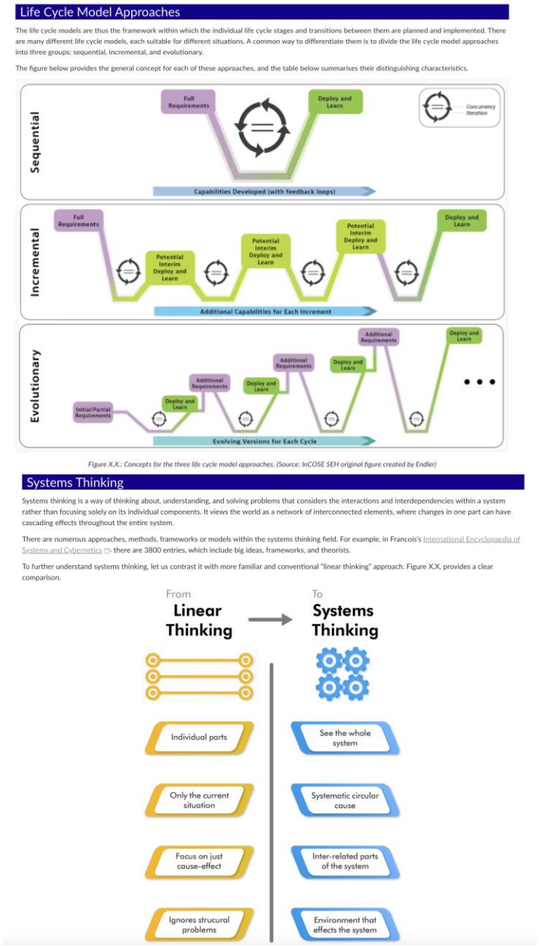



*Figure X.X: Concepts for the three life cycle model approaches. (Source: InCOSE SEH original figure created by Endler)*

Fig. Example content from Systems requirements module.

## AI Course

An AI training programme is under development for Dyson people. Dr Mehdi Biroun (Lecturer – Mechanical Engineering) has contributed to the development of this programme and will deliver the "Discover AI" session within the training. This session will build on content from the AI conference to introduce the fundamental concepts of artificial intelligence, explore its historical evolution, and present compelling examples of its impact on academic research.

# External Engagement & visits

2025 has seen an increase in external engagement though conference week and visits from the OfS and a delegation from USA interested in transformative models of higher education

**Conference Week 2025**

The return of conference week saw four days of events, with over 200 attendees from 40 different organisations including Imperial, UCL and Oxford University. Over 30 presentations were delivered, covering topics such as Acoustofluidics, Artificial Intelligence and experiential learning.

For the first time, the Institute was also able to bring Dyson funded PhD students together to present their research.

Continuing our drive to 'Understand the Effectiveness of Experiential Learning' we welcomed experts in the field to present from Northeastern University London and Sheffield Hallam to share their experiences, as well as discuss the Institute model and hear from our students on the successes and challenges.

This is the second conference week we've hosted, and attendees are increasingly more aware of the Institute, even within niche sectors such as microfluidics, with the chance to talk with our students and faculty being of key interest across the events.

**USA visit**

In August, the Dyson Institute of Engineering and Technology hosted a high-profile delegation of over 65 senior leaders from the Western Governors Association and the National Governors Association in the United States. This group included regulators, policy analysts, state apprenticeship directors, and heads of academic institutions, to explore transformative models of higher education and apprenticeships.

The US has an established apprenticeship infrastructure primarily concentrated in the healthcare sector, so the delegation were eager to investigate how the Dyson model could be adapted to encourage similar innovation within engineering and technology disciplines in the US.

This visit showcased the Dyson Institute's model of excellence in integrated education and industry collaboration and allowed dialogue on the future of apprenticeships in engineering. The delegation departed with a renewed vision for how apprenticeship models can be reimagined to meet the demands of a rapidly evolving global workforce.

**OfS Visit**

In September Edward Peck, chair of the Office for Students (OfS) visited the Institute and met with members of Council to understand more about the Institute and its relationship with the OfS. Edward left impressed by our model, the type the Higher Education Research Act (HERA) was designed to facilitate and wondering why other parts of industry weren't following suit.


Fig: (clockwise) Students speaking at conference week, USA Western Governors association visit, Edward Peck visit, Farzaneh Hafezi, Senior Lecturer, presenting at the AdvanceHE annual conference.

# Staff achievements 2024/25

This year we have seen staff achieve further qualifications, professional recognition, win awards and support academia and industry through engagement with working groups and boards.

**Overview**

The collective achievements of the Dyson Institute team over the last academic year reflect our commitment to innovation, student empowerment and academic excellence.
Their diverse qualifications across leadership, engineering, IT, and student wellbeing showcase the depth and breadth of expertise within the team.

In total, ten of the team have achieved further qualifications, four professional recognition (HEA and IMechE) and many more completed professional development to support with their roles. In addition, several staff have roles on external boards where they provide subject matter expertise to support the sector. This includes Laura Cochrane (Co Chair, IHE data network), Professor Beverley Gibbs (Social Mobility Commission) and Professor Kay Bond (Board of Trustees of the Engineering Council).

**Qualification case study:**

*Catherine Hearn, PGDip in Higher Education Administration, Management and Leadership*

Studying for the PGDip has given Catherine a deeper understanding of institutional strategy implementation, leadership, policy and governance.

Fig, Catherine Hearn at her PgDip Graduation

The PGDip also allowed for exploration of the wider Higher Education landscape and surrounding context. Alongside this research, collaboration with professional services staff at other institutions provided opportunities to share best practice and discuss improvement initiatives.

**Professional recognition case study:**

*Dr Ugur Efem and Dr Usman Ejaz, HEA Fellowship*

Usman was enrolled in a PGCAP (Postgraduate Certificate in Academic Practice) which led to his FHEA. A 2year part time course, the first year led to him gaining a CILT (Certificate in Learning and Teaching) and the complete course led to his FHEA.

As part of the course, he completed 4 different modules with lectures, online learning material and a couple of summative assignments in each one of them. Last year, he completed modules on module design and action research.

For Ugur the process was a little different as he directly submitted his portfolio to the HEA. In his portfolio he outlined how his teaching practices, design of teaching and learning activates, and assessment and feedback practices are informed by the pedagogic literature and, provided evidence that his professional practice in teaching and support of learning meets the standards set out in the UK Professional Standards Framework (UKSPF).

Ugur also provided support to Neil Nestor to gain his AFHEA and June Rogers for her SHEA.

**Awards:**

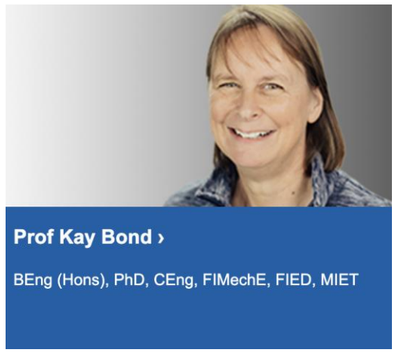
The Dyson Institute was nominated for six awards this academic year, we won:

- Edufuturist Accessibility Champion Award 2025 –(Corianne Fancourt)
- SACPA International Safeguarding Award 2024

We were shortlisted for the Times Higher Education Awards "Specialist Institution of the Year."

**External board case study**

Professor Kay Bond was Elected to the Board of Trustees of the Engineering Council following nomination by EngineeringUK. This prestigious appointment gives Kay insight and influence in the governance of the Engineering Council who are the UK's regulatory body for the engineering profession to deliver accountability and trust within the field.



# Research

This year the Institute has built on the foundations set last year to embed research governance and increase research output.

## Overview

In 2024/2025 the Institute has operationalised its research embedding research and ethics committees within the academic governance structure. A research lab has been further developed, and several undergraduates are actively involved in academic research projects.

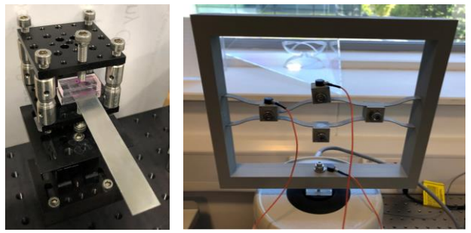


Fig: Active research projects in the Institute research lab.

Research at the Institute is based around three themes:

- Sustainable Adaptive Futuristic Engineering
- Resilient Autonomous Connect Systems
- Pedagogical Research

There are now 10 PhD students being supervised by nine of the academic team. We have six university partners including Oxford and Newcastle and have had more than 10 journal articles published in Q1 and Q2 of 2025.

## Research Informed Teaching and Learning

Our academic team use their research to engage students with the subject matter and show the latest methods and technologies within their disciplines:

- Systems Modelling & Control: Specification and validation - we discuss and produce custom specifications and validation techniques for various system implementation.
- Robotics: Behaviour design - We explore the development and evolution of single and multi-agent systems looking at the impact of limited communication and bio-inspired design
- Vibration and Rotordynamics: Linear and Nonlinear Modelling in Structural Dynamics – We investigate the identification and updating of appropriate mathematical models to predict the dynamic behaviour of structures and rotor systems.
- Software Design and Development: Achieving high level of software reusability is critical to be successful in the highly competitive software market environment. We introduce a feature-oriented reuse method and discuss the recent challenges and trend in software reuse.

## Research Case Studies

Biroun et al. published “Energy dissipation mechanisms during droplet impact on superhydrophobic surfaces,” utilizing the newly built Dyson Institute research lab to investigate the complex behaviour of droplets contacting water-repellent surfaces. The outcomes of this research have practical implications for agriculture, lab-on-a-chip devices, micro energy harvesting systems, solar panel design, and self-cleaning hygiene surfaces. Notably, this Q1 journal publication marks the first time an Institute student actively collaborated with Dyson academics on academic research.

There is a growing need for engineers with both practical skills and global experience, beyond local industry exposure. Chakraborty, Hafezi & Ikhlaq. in their work “Towards Global Engineers: A practical approach to enhancing global competencies” investigated how international work placements can broaden engineering students’ competencies, highlighting the Dyson Institute approach and other models to enhance **adaptability** to global industry standards.

Traditional risk analyses of autonomous systems often overlook wider sociotechnical factors. Winter, Downer, **Wilson**, et al. in their work “Applying the ‘SOTEC’ framework of sociotechnical risk analysis to the development of an autonomous robot swarm for a public cloakroom” investigated the application of a comprehensive framework to assess both technical and nontechnical sources of risk, demonstrating its value for understanding and managing complex, systemic risks in real-world autonomous robot deployments.

Reliable mathematical modelling for nonlinear dynamic systems is crucial for **sustainable** design, manufacturing, and maintenance in various industries, yet remains challenging. Taghipour et al. in their work “Enhancing Model Selection for a Nonlinear System: A Physics-Based Machine Learning Approach” investigated a novel Physics-Based Machine Learning technique for selecting and estimating models of structural dynamics, demonstrating, using a cubic-quintic oscillator case study, that their approach accurately identifies system behaviour and parameters with less than 2% error.