UK INSTITUTE FOR TECHNICAL SKILLS & STRATEGY

GATSBY

UKRI Research England

Technician Commitment

T Level industry placements in higher education and research:

Sector insights and practical guidance

Foreword

UK Institute for Technical Skills & Strategy

Dr Kelly Vere MBE
Director, UK Institute for Technical Skills & Strategy

As someone who began my career as a technician, I've seen first-hand the transformative impact that technical professionals have across higher education and research. They are central to research, innovation and teaching, ensuring our laboratories, studios, workshops and facilities function at the highest level. Yet for too long, this essential community has remained largely invisible.

That's why I worked with the Gatsby Charitable Foundation to establish the Technician Commitment in 2017. This sector-wide initiative focuses on securing greater visibility, recognition, career development and sustainability for technical staff. In 2020, with support from Research England, we launched the TALENT Programme, followed in 2022 by the TALENT Commission, the first comprehensive review of the UK's technical workforce in higher education and research. This work laid the foundation for the establishment of the UK Institute for Technical Skills & Strategy (UK ITSS), launched in 2023 to lead national efforts to strengthen the UK's technical workforce.

A key part of UK ITSS work is ensuring we attract and support the next generation of technical talent. That's why I'm so proud to introduce this report.

T Levels, a relatively new qualification introduced in England, offer a clear, high-quality route into skilled employment. One of their defining features is the industry placement, which gives students a minimum of 315 hours of meaningful experience in a real workplace. For the past 18 months we've been working with universities and research institutes to explore how they can host these placements within their technical teams.

The response has been remarkable. As the case studies in this report show, T Level placements have delivered real benefits for students, technical teams and institutions alike. They are helping to widen access to technical careers, build workforce resilience, and strengthen civic and educational engagement. Students bring fresh perspectives, energy and support to technical teams while gaining invaluable insight into career paths they may not have previously considered.

Hosting T Level industry placements represents one of the many ways universities are stepping up to support the national technical skills agenda, and to embed a culture of inclusion, outreach and opportunity. It also aligns powerfully with the values we champion through the Technician Commitment.

I would like to extend my sincere thanks to the Gatsby Charitable Foundation for funding this work, and to Joanne Hartley-Metcalfe at UK ITSS for her leadership in driving this programme forward with such insight and commitment.

My thanks also go to all those who contributed to this report, and to the growing number of institutions leading the way in hosting T Level students. Your leadership is not only strengthening our technical community, it is building a stronger, more inclusive future for UK research, innovation and education.

Foreword

Gatsby Charitable Foundation

Natasha Watkinson
Project Manager, Gatsby Charitable Foundation

Technical education – including T Levels – offers young people a clear route from school into rewarding technician occupations, and progression to higher education for those who wish to study further before entering employment.

As part of Gatsby's work to support the provision of high-quality technical education, we are delighted to have helped the UK Institute for Technical Skills & Strategy grow T Level industry placements in universities and research institutes. It is evident that these institutions are really beginning to benefit from giving T Level students valuable insights into the exciting (and sometimes unknown) variety of technical careers that exist in higher education and research.

We know that many more opportunities can be made available to a pipeline of enthusiastic and curious T Level students who are developing their skills and ideas about their next steps and future careers. Students pursuing T Levels in subjects such as Science, Engineering, Digital, Creative and Design, and Legal, Finance and Accounting could form a key part of the workforce of the future for a wide range of faculties, departments and functions.

We hope that you are inspired by these case studies and the outcomes they demonstrate for students and employers, and that you start to explore the possible industry placement opportunities and progression routes into employment or further study at your own institution.

Vicky Dearing, Senior Laboratory Research Scientist explaining next generation sequencing on the NovaSeqX to T Level students. The Francis Crick Institute, Genomics STP

Introduction

Technical professionals in UK higher education and research

Technical expertise is fundamental to the success of UK research, innovation and higher education (HE) which, in turn, is vital to the growth of the UK economy. Technicians and technical professionals underpin the core activities of universities and research institutes, providing the foundation for excellence in research, teaching, knowledge exchange and innovation. Many of these people are also researchers, educators and mentors, playing a key role in shaping the technical skills and capabilities of students and early career researchers.

The UK's HE and research technical workforce is highly skilled and diverse, encompassing a wide range of disciplines and job roles across science, engineering, medicine, IT, the arts, humanities and creative industries. It is thought that between 30,000 and 50,000 technical professionals work in UK universities alone.

These individuals perform essential functions that are critical to the UK's research and development ecosystem – from maintaining cutting-edge facilities and developing new techniques, to training students and ensuring that creative and scientific outputs are reproducible and reliable.

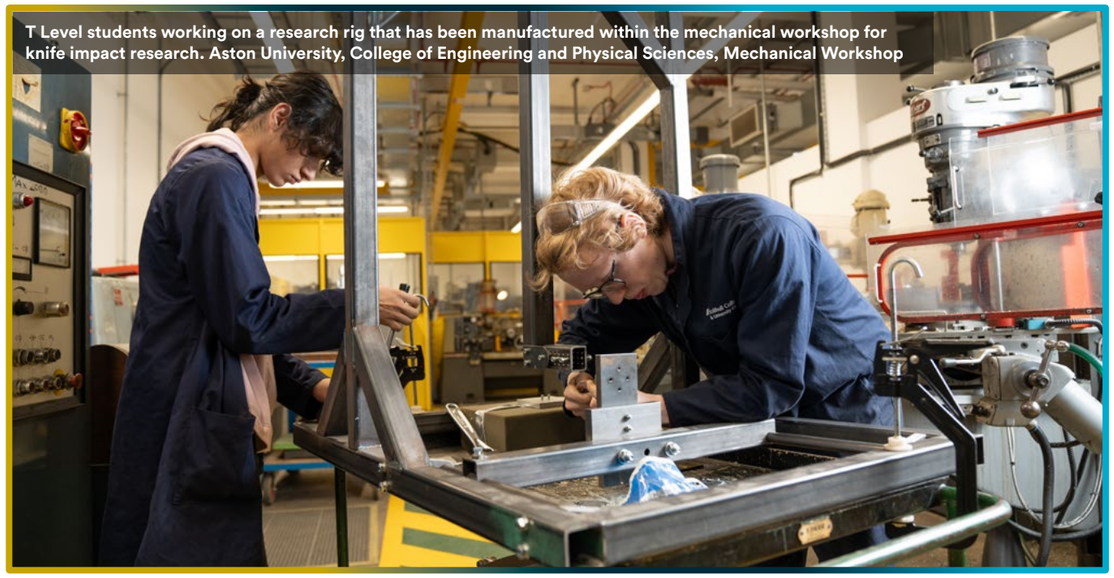
Despite their vital contributions, the people and technical expertise required to make progress possible are often overlooked in discussions about research infrastructure, investment and emerging technologies.

This is compounded by a demographic challenge: many parts of the technical workforce are ageing, with a significant proportion expected to retire over the next decade. Without targeted action, we risk losing decades of knowledge and expertise. There is an urgent need to attract, train and retain a new generation of technical professionals. Doing so will be essential if the UK is to achieve its ambitions for science, innovation, the creative industries and economic growth.

We must ensure that technical careers are visible, supported and accessible to people from all backgrounds. Inspiring the next generation of technicians is critical – and this begins with making the breadth of technical career pathways visible early in young people's education. By raising awareness and showcasing the diversity and value of technical roles, we can spark interest, expand aspirations and create meaningful routes into rewarding and impactful careers.

What are T Levels?

T Levels are two-year, technical qualifications in England. Designed for students aged 16–19, one T Level is equivalent to three A-levels. They combine classroom learning with a 315-hour industry placement to develop practical skills, preparing students for skilled employment, apprenticeships and higher education.



T Level students working on a research rig that has been manufactured within the mechanical workshop for knife impact research. Aston University, College of Engineering and Physical Sciences, Mechanical Workshop

Why host a T Level industry placement?

Hosting T Level industry placements offers a strategic opportunity for HE and research institutes to contribute to the development of the UK's future technical workforce. This approach supports workforce planning by contributing to the pipeline of skilled technical professionals who are essential in delivering research, innovation and teaching in a modern university context.

Incorporating T Level students into technical teams broadens access to technical careers and creates new entry routes into the sector. These placements enable institutions to engage directly with students at an early stage, providing opportunities to shape, mentor and inspire future technical staff. This early investment promotes a more diverse, prepared and motivated future workforce.

Welcoming T Level students increases the visibility of technical careers within HE and research and helps young people better understand the breadth and value of technical roles. Many students report that they had not previously considered a university to be a potential place of employment. Hosting placements helps address this gap in understanding.

Hosting T Level industry placements supports public engagement, civic responsibility and widening participation strategies. They contribute to broader sector commitments, such as the Technician Commitment, by providing evidence of action.

Supervising a T Level student provides professional development opportunities for technical staff, enhancing their leadership, mentoring and management skills.

T Level students offer direct operational benefits. Their contribution can ease workloads and provide valuable support to technical teams. Their presence adds capacity and enables staff to focus on higher-level tasks, strategic initiatives and training activities.

About this report

This report has been produced to support senior leaders across HE and research institutes in England. It offers insights and guidance on the implementation and benefits of hosting T Level industry placements. It is also intended to equip technical managers and professional services staff with the tools and confidence to initiate or expand these placements within their institutions.

Central to the report are case studies from across the sector, which highlight the substantial gains, successes and benefits that are impacting institutions, technical staff and the T Level students themselves. Several students have transitioned into paid roles and apprenticeships, underscoring the long-term value these placements can offer.

We are grateful to all of the contributors who have generously shared their experiences and helped shape this report. Their insights demonstrate the sector's growing commitment to nurturing technical talent and increasing the visibility of technical careers in HE and research.

Sector progress and emerging themes

Since January 2024 the HE and research sector has made significant strides in supporting T Level industry placements in collaboration with the UK ITSS. As a result, 35 institutions are now actively preparing for and hosting placements.

Through our engagement with these institutions, several themes have emerged:

- increased **visibility and recognition** of technical roles among young people and the wider community
- **career development** for technical staff
- supporting the long-term **sustainability** of the technical workforce
- recognising **technical education** routes into technical careers

Oliver Prowse, Technical Support Officer, training a T Level student how to operate the software to start a high-throughput formulation project on the robot. University of Liverpool, Materials Innovation Factory

Visibility and recognition

One of the most significant outcomes reported by participating institutions and T Level students has been the increased visibility of technical careers. The placements enable young people to develop a clearer understanding of the vital contribution technicians make, and what it means to be a technician within the university or research setting.

Several institutions have engaged with local T Level providers through college visits, guest speaker opportunities and site tours. These pre-placement activities not only improve candidate readiness but also support outreach and attract motivated, well-informed students to the programme.

This approach aligns with **Recommendation 6 (R6)** of the **TALENT Commission Report**, which calls for employers of technical staff, funders and sector bodies to promote technical careers in schools and colleges through targeted outreach and engagement.

Personal and professional career development

Institutions report that managing and supervising T Level students provides professional development opportunities for technical staff.

Training T Level students has helped staff improve the way they communicate technical knowledge. The process of translating complex information into practical, hands-on learning experiences has strengthened their instructional and coaching skills, while providing feedback has enabled them to cultivate their mentoring approach, developing the confidence to guide others through technical learning pathways.

Staff have recognised the importance of demonstrating best practice in real time, including high standards of health and safety, integrity, attention to detail, and team collaboration. In doing so, they are not only guiding student learning but also reflecting on and recommitting to professional excellence within their own practice.

For many, sharing years of accumulated expertise, built through practical experience and dedication, has provided a renewed sense of purpose. Being able to inspire and kick-start a young person's career in the technical profession can be personally rewarding. It is an opportunity to tangibly shape the future of the profession.

These experiences have also strengthened collaboration across teams, faculties and departments as staff work together to deliver high-quality placements and share best practices. This has contributed to more connected and resilient technical communities within institutions.

Collectively, these benefits reflect the aspirations set out in **Recommendation 10 (R10)** of the **TALENT Commission report**, which urges employers, funders and sector bodies to ensure accessible and role-specific professional development for technical staff. Supervising T Level students provides a practical, hands-on route to development, reinforcing leadership capacity, enhancing team dynamics and enabling staff to grow through supporting others.

Sustainability of the future technical workforce

Across the sector, T Level industry placements are increasingly recognised as a strategic mechanism for supporting the long-term sustainability of the technical workforce. Institutions report that these placements provide a valuable opportunity to engage with students over an extended period, allowing technical teams to observe, mentor and evaluate emerging talent in a live working environment. In this way, placements serve as a long-form interview process, helping institutions make informed decisions about future hires with significantly reduced risk.

Many institutions have retained T Level students in paid roles or apprenticeships on completion of their placements, citing their maturity, professionalism and technical proficiency as key drivers of success. The presence of such high-calibre students has inspired some institutions to create new career entry pathways.

Even in instances where immediate progression opportunities cannot be offered, institutions report that the placement experience equips students with the skills, behaviours and confidence needed to excel elsewhere. Host institutions are playing a critical role in preparing workforce-ready individuals who will go on to contribute across the wider sector and local economy.

This approach reflects the intent of **Recommendation 1 (R1)** of the **TALENT Commission report**, which calls on employers, funders and government departments to adopt a strategic and sustainable approach to technical careers and skills development. By embedding T Level placements within workforce planning, institutions are meeting immediate capacity needs while also investing in a skilled and resilient future workforce, whether students remain within their organisation or progress to other roles in the sector.

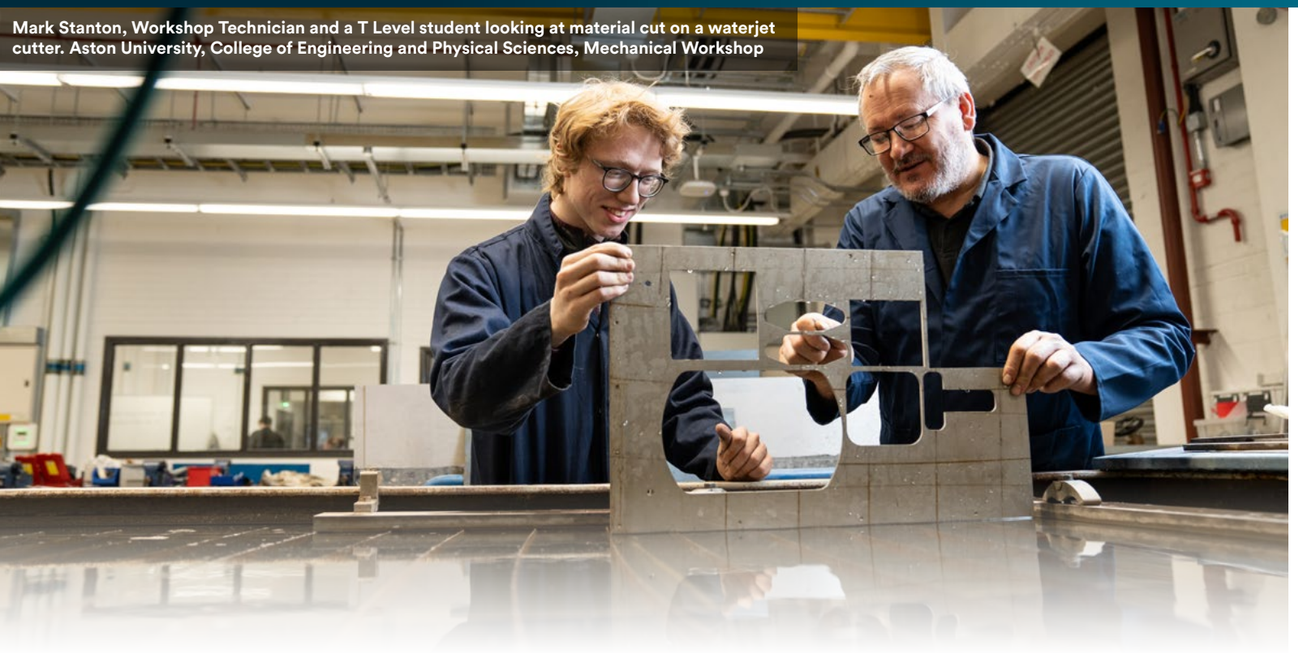
Recognising technical education routes into technical careers

Throughout this initiative, the wealth of case studies, collaborations and sector-wide engagement show T Levels as an emerging pathway into technical careers. The sector's commitment to providing industry placements to local young people supports the development of future technicians and reinforces the value and credibility of T Level qualifications. By offering these placements, universities and research institutes are sending a clear and powerful message: T Level qualifications are not only respected, they are an essential route to rewarding technical careers. This endorsement helps build confidence in both the qualifications themselves and the individuals pursuing them, inspiring more young people to regard T Levels as a viable pathway to career success.

The willingness to engage with T Levels aligns with **Recommendation 15 (R15)** of the **TALENT Commission report**, which encourages technical staff to engage positively with current and future opportunities. Through their involvement, employers shape the future of the workforce and invest in the development of technical talent, enhancing the value of technical education pathways. This involvement not only secures the future of technical skills but also nurtures the next generation of professionals who will drive innovation and excellence in the sector.

> "Being able to inspire and kick-start a young person's career in the technical profession can be personally rewarding."

T Level students observe Dr Carolina Grandellis, Head of the Earlham Biofoundry, as she demonstrates the Opentrons OT-2 robot in action. Earlham Institute



Mark Stanton, Workshop Technician and a T Level student looking at material cut on a waterjet cutter. Aston University, College of Engineering and Physical Sciences, Mechanical Workshop

Aston University

At Aston University, T Level students who arrive shy and reserved often leave with the confidence to engage in high-level professional conversations. This transformation is what makes the programme most rewarding for Reece Lillie, Head of Technical Services for Engineering & Physical Sciences.

"Seeing their growth week by week, the confidence they gain, and the enjoyment they find in their career path are the real highlights," Reece says. "You know they're leaving with the right foundation to pursue their career, wherever it may take them."

Building confidence through experience

Now in its third cycle, Aston University's T Level programme currently hosts two Engineering and Manufacturing students who are gaining practical experience in the Mechanical Engineering Workshop where they are introduced to a wide range of skills such as milling, turning, bench work, waterjet cutting, CAD/CAM and additive manufacturing (3D printing).

Creating a sustainable talent pipeline

Reece sees T Level placements as a perfect opportunity to assess students' potential for apprenticeships while also preparing them for the realities of the workplace during their 315-hour placement.

Aston University is now looking to expand its T Level placement offering by working with additional providers and opening up more facilities for placements.

Reece encourages other institutions to do the same: "Engineering is something that requires nurturing. Not all schools offer it, and not everyone knows what career paths are out there. T Levels give you the opportunity to showcase your institution, and to discover the people who might become part of your future workforce."

Advice

- Create a job profile that clearly explains the role, enabling students to apply for industry placements relevant to their interests (use apprenticeship profiles to save time).
- Fully integrate students into your team. Provide them with ID cards, email access and a sense of belonging.

Impact

- **Career development of technicians:** supporting the growth and development of technical staff.
- **TALENT Commission R6:** supporting outreach and public engagement activities in local schools and colleges to increase young people's awareness of technical career opportunities.

Aston University
BIRMINGHAM UK

Cranfield University

Jamie Bristow, Engineering Technician, training a T Level student on the test object set up. Cranfield University, Faculty of Engineering and Applied Sciences, Cranfield Impact Centre

When a technical member of staff at Cranfield University had the opportunity to mentor a T Level Science student, she gained valuable management experience that contributed to her career development, demonstrating the lasting impact of investing in T Level industry placements.

Developing supervisors through T Level industry placements

Hannah Charlotte-Smith had previously completed a Level 3 Laboratory Technician apprenticeship and is now pursuing a Level 6 Laboratory Scientist degree apprenticeship. During her time supervising a T Level student, the growth in Hannah's management skills was significant. "It was a pleasure to witness her development," says Maria Levet, T Level Employer Lead at Cranfield.

Janet Papworth, Senior Talent and Development Business Partner, notes that the strategic decision to offer hosting a T Level placement to Hannah, who had previously completed a similar apprenticeship, built on her existing experience and demonstrated a clear investment in talent development: "It allowed her to apply and develop her own leadership skills."

This line management experience was only possible at the time because of the T Level programme.

Cranfield's first T Level student began his placement in January 2024 and his passion and dedication left a lasting impression.

Expanding the industry placement programme

Cranfield University is currently hosting four T Level Engineering students on a day-release basis, all of whom are excelling in their roles. These placements span various departments, including the Cranfield Impact Centre, the Machining and Fabrication Workshop, the Composites and Advanced Materials Centre and the Welding and Additive Manufacturing Centre.

Building a sustainable talent pipeline

Maria is a strong advocate of T Level industry placements, highlighting that they significantly contribute to the skills and knowledge of young people pursuing technical careers: "Offering these placements to young adults, particularly those from the local area, enables us to attract potential future employees to Cranfield. Growing our own talent is important in this unique environment."

Cranfield University

Advice

- Use T Level placements to give technical staff the opportunity to take their first steps into management and develop their leadership skills, particularly those who have completed a similar level apprenticeship.
- If resources allow, appoint a dedicated T Level Lead as a central point of contact. This role can help support technical teams and streamline the placement process.

Impact

- **Career development of technicians:** supporting the growth and development of technical staff.
- **TALENT Commission R15:** technical staff are engaging positively with current and future opportunities while technical managers are supporting their teams, encouraging participation and celebrating successes.

Sector support and resources

Read the full, detailed versions of the case studies featured in this report online.

itss.org.uk/university-t-level-placement-toolkit

Durham University

T Level student obtaining welding experience. Durham University

Former T Level student, Dylan Milburn working on power BI. Durham University

For Durham University's Computing and Information Services (CIS) department, T Level industry placements have been incredibly successful. Three students made such a remarkable impact during their placements that they were offered full-time apprenticeships at the university.

Student success stories

One of the notable success stories is Dylan Milburn who made a significant impact during his Digital T Level placement. Dylan is now employed at Durham University as an Information Services apprentice, pursuing a Level 5 Data Engineering apprenticeship. During his placement, Dylan worked with the university's Faculty of Science, developing Power BI apps to enhance data analytics for student progress. His work was so effective that other teams are now eager to host a T Level student.

Professor Jacquie Robson, Associate Pro-Vice-Chancellor (Taught Programmes), sees Dylan's success as just one example of the programme's impact. This sentiment is echoed across all of the departments that were involved, where students were praised for bringing immediate value to the workforce.

Widening participation and career awareness

Jacquie emphasises that industry placements not only introduce students to potential career opportunities at Durham University but also strengthen the university's commitment to widening participation: "The students told their supervisors that they hadn't realised how many people Durham University employs. Helping these young learners see the university as a genuine career option is exactly what we aim to achieve in the local area."

Growing interest across departments

Interest in hosting T Level placements has grown significantly across various university departments. A T Level Science student is thriving in the Geography department's technical team where they operate instruments for advanced research measurements. "The key is thinking innovatively and recognising these opportunities," Jacquie explains.

Looking ahead: the future for industry placements

Jacquie is confident that T Level placements are here to stay: "We've already arranged 20 placements this year, with more potentially in the pipeline. We're welcoming Engineering students for the first time, and plenty more Digital placements. This rapid growth highlights Durham's commitment to providing diverse and valuable industry experience for T Level students."

Advice

- Think creatively about departments or roles where T Level students could thrive.
- Collaborate with multiple T Level providers to engage with young people across the local area.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R1:** taking a strategic approach to ensuring the sustainability and appropriateness of technical skills and careers at both a local and national level by investing in a new pipeline of technical talent.

Earlham Institute

T Level industry placement students have had the opportunity to engage with leading scientists at the Earlham Institute, giving the students valuable hands-on experience and enabling them to grow in confidence.

Supporting early career development

Since 2023 the Earlham Institute has hosted five T Level Science students, providing practical training in genomics and laboratory automation, and exposing students to technician career opportunities.

"They probably don't know anyone working in a place like this," says Greg Bowker, former Head of Communications. "To open their eyes and give them that insight at such an early stage into what could be an amazing, fulfilling career is incredibly rewarding."

Experiencing science in action

T Level students were placed in the Technical Genomics Group and the Earlham Biofoundry where they undertook a range of activities such as DNA sequencing, isolating nucleic acids from fish and plants, micro-pipetting with high-throughput automation, and using robotics to process 96 samples simultaneously. Following thorough training, the students worked on active research projects, processing biological samples.

Building student confidence

At the NBI Accessible Science event, students interacted with researchers and networked with industry professionals while hosting the Earlham Institute's stand. Fiona Fraser, Senior Research Assistant, recalls how the students showcased their work to both peers and members of the public: "Two students were naturally quite reserved, but by the end they were engaging effortlessly with others. Their confidence truly flourished."

Skills development and mentoring

Hosting industry placements is mutually beneficial. Students gain real-world skills while staff have the opportunity to develop as mentors. Greg explains "It's a great opportunity for our research technical professionals to take on mentoring roles, helping them build leadership and management skills."

Placement structures

T Level placements at the Earlham Institute are shaped in collaboration with the education providers, allowing for a tailored approach that meets both student and institutional needs. One student experienced a blended structure combining block placements with day release, while two others completed their placements in two blocks of four to five weeks.

Advice

- Organise a tour to introduce students to your institute and the type of work they will be involved in.
- Encourage student participation in technician events to broaden their exposure and understanding.

Impact

- **Visibility:** showcasing the contribution of technicians within and beyond the institution.
- **TALENT Commission R6:** supporting outreach and public engagement activities in local schools and colleges to increase young people's awareness of technical career opportunities.

Karim Gharbi, Head of Technical Genomics, observing a T Level student practicing aliquoting extracted DNA using a micropipette. Earlham Institute, Technical Genomics

The Francis Crick Institute

The Francis Crick Institute (The Crick) is preparing to host its first-ever T Level industry placements, marking a significant milestone in its outreach and education efforts.

T Level student using a microscope. The Francis Crick Institute, Experimental Histopathology STP

First impressions

Ellie Horner, Education Operations Manager, recalls that early interactions with the local college allowed the students to share how much they wanted to engage in more of the practical activities they enjoyed during their science lessons. This helped the team at The Crick fully understand the purpose and potential of T Levels, particularly how they serve students seeking technical pathways into science careers.

Widening participation and local impact

The Crick offers a range of work placement schemes designed to widen participation, but what sets the T Level programme apart is its emphasis on the technical route.

The Crick's involvement in T Levels aligns with its obligations under a Section 106 planning agreement with Camden Council, which requires the institute to support local people, schools and the community, but also goes beyond this to reflect a broader, long-term commitment to developing local talent and strengthening pathways into science.

The first two students are set to begin their placements in autumn 2025.

Building the programme

Ellie says there has been genuine excitement across all levels of the organisation, and staff are keen to participate in the programme: "A major motivation is our commitment to local schools and the strategic goal of inspiring local teenagers. T Levels are a meaningful way to achieve that."

Developing a skilled technical workforce

Ellie emphasises "There is a significant technical skills gap, and T Levels could be a great way to help address this. We have entry-level roles that T Level students could progress to, including a Laboratory Operations Assistant, and possibly apprenticeships."

"T Levels are not just creating an applicant pool for technical roles at The Crick," Ellie concludes, "but an applicant pool of skilled people who can perform the tasks we need for laboratory roles across the science research sector."

Senior management is particularly interested in how T Levels give technical staff the opportunity to develop line management and mentoring skills too.

Advice

- Build a support network with other organisations that have already hosted T Level students. Sharing experiences and best practices can streamline implementation and provide valuable insights.
- Work closely with your local T Level providers to help prepare the students for their placements, using in-class time to develop basic technical skills and an understanding of the workplace.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R6:** supporting outreach and public engagement activities in local schools and colleges to increase young people's awareness of technical career opportunities.


Marina Franceschetti, Research Assistant and a T Level student recording pea phenotypes. John Innes Centre, Biochemistry and Metabolism, JIC Glasshouses

John Innes Centre

For one student, a T Level Science placement at the John Innes Centre (JIC) was life-changing, reshaping her career aspirations and igniting a passion for plant science. Success stories like this one is why JIC is committing to more T Level industry placements.

Building the placement model

An international centre of excellence in plant science, genetics and microbiology, JIC is supporting T Level industry placements through a structured pilot programme that will evaluate the benefits for students, staff and the organisation.

Earlier this year, JIC welcomed two T Level students, integrating them into its cutting-edge research groups.

One student joined the Crop Genetics department, mastering essential laboratory techniques such as using a pH meter, centrifuge and infrared spectrometer. He contributed to phenotyping wheat roots, collected soil CO_2 samples, and performed DNA extractions independently by the end of his placement.

Another student immersed herself in molecular biology within the Biochemistry and Metabolism department, successfully extracting DNA from pea samples, conducting PCR analysis, and learning cloning techniques. Dr Clare Stevenson, Head of Science Coordination and Research Culture, notes that this was "an exciting opportunity for the T Level student to conduct 'real' research."

Why T Levels matter at JIC

Dr Shannon Woodhouse, Education Programme Coordinator, explains JIC's motivation: "Our staff truly recognise the value of supporting the next generation who will one day step into the roles we have here. By hosting T Level placements, we ensure essential technical skills are developed and available for our future workforce."

Shaping career aspirations through mentorship

T Level placements at JIC have proven to be more than just technical experiences – they have also been career-defining. Shannon explains how one student, inspired by her placement, is keen to look for work in plant science in the future: "Her host, Dr Marina Franceschetti, clearly shared her passion for the subject. That kind of mentorship is what makes these placements so valuable."

Expanding the T Level programme

This summer JIC is expanding its pilot programme by hosting two more T Level Science students. These placements will focus on media preparation, providing hands-on experience in preparing solutions and chemicals, managing laboratory waste and supporting operations across departments.

By testing placements in both research and technical support roles, JIC is identifying where students gain the most valuable experience, and where their contributions benefit the organisation most.

Advice

- Appoint a T Level coordinator or central point of contact to manage placements and evolve the programme with the support of senior management.
- Involve your communications team to align T Level industry placements with corporate messaging and public engagement efforts.

Impact

- **Visibility:** showcasing the contribution of technicians within and beyond the institution.
- **TALENT Commission R6:** supporting outreach and public engagement activities in local schools and colleges to increase young people's awareness of technical career opportunities.

Former T Level student, Agatha Ward preparing solutions in the flow cytometry lab. MRC-LMB

Medical Research Council Laboratory of Molecular Biology

The first T Level Science student to complete a placement at the Medical Research Council (MRC) Laboratory of Molecular Biology (LMB) made such a strong impression with her maturity, conscientiousness, enthusiasm and curiosity that they offered her a degree apprenticeship.

Student success story

Agatha Ward, a former T Level student, is now pursuing a Laboratory Scientist degree apprenticeship at Anglia Ruskin University while working in flow cytometry at the LMB. Her career trajectory took a pivotal turn when she approached her mentor, Pier Andrée Penttilä, Head of the Flow Cytometry Facility, with a bold request to create a position specifically for her.

"I was more than happy to support Agatha in pursuing a degree apprenticeship," Pier says. "She demonstrated the maturity, enthusiasm and curiosity needed for this field. These qualities are essential for becoming a successful technician, technical specialist, or even a scientist, and she exemplified them all."

Agatha says she gained the confidence to make the request after delivering a presentation at the LMB's Annual Technician Week in January 2024: "I was really excited about the opportunity to speak publicly. I loved musical theatre as a kid, so it felt great to be on stage again, this time talking about science."

Agatha's presentation detailed her experiences as a T Level student across multiple LMB facilities. The experience left her with a sense of achievement.

"She did an excellent job," Pier recalls. "I still get nervous giving presentations, so for a 17-year-old to stand up in front of a room full of scientists, some of whom are well-known, was incredibly impressive."

The LMB's commitment to technical careers

The LMB's involvement with the Technician Commitment (TC) was a key factor in their decision to host T Level students. As a TC signatory, the LMB is committed to enhancing the visibility, recognition, career development, and sustainability of technical staff. "One of our goals is to promote career progression for technicians," Pier explains. "Hosting T Level students is a great way to inspire young people and show them the exciting careers available in scientific research."

> "Hosting T Level students is a great way to inspire young people and show them the exciting careers available in scientific research."

MRC Laboratory of Molecular Biology

Getting started with industry placements

To begin hosting T Level placements, Pier and her colleagues collaborated closely with their local T Level provider, delivering a comprehensive presentation on the science facilities at LMB. These included genotyping, flow cytometry, biophysics, media and glasswash, and light microscopy, giving students a clear understanding of what the placement would involve. Pier explains that the selection process included interviews that simulated real-world job applications: "We wanted to make sure the student was genuinely interested in our proposal and enthusiastic about what we do, as we knew this would have a huge impact on the success of the placement."

Pier Andrée Penttilä, Head of the Flow Cytometry Facility, demonstrating to Agatha Ward, Degree Apprentice, correct pipetting technique when running samples on the Sony ID7000 spectral flow cytometer. MRC-LMB

Agatha's placement experience

During her placement, Agatha gained hands-on experience in a variety of laboratory activities, including quality control checks on laboratory machinery, and PCR tests on mouse ear samples in genotyping (an experience she describes as "really awesome"). She was inspired by witnessing women in science excelling in technical roles. After exploring all five disciplines, she chose to spend her final three weeks in flow cytometry where she ultimately secured her apprenticeship.

The rewards of mentoring

While Agatha rotated through different facilities, Pier remained her primary mentor: "Mentoring is incredibly rewarding. Watching a student, full of curiosity and enthusiasm, grow into their role is amazing. Looking back at my career, I would have really benefited from a programme like this."

Pier also emphasises that mentorship is a two-way process: "You have to be an active listener and be open to learning about yourself. It's not just about passing on knowledge – it's about evolving as a leader. People assume the mentee benefits the most, but great mentorship is an exchange that helps both parties grow."

Expansion plans and opportunities

Following Agatha's success, the LMB welcomed their second T Level student in March 2025. Interest in the programme has grown, with more facilities expressing interest in participating after seeing Agatha's progression to an apprenticeship.

Pier believes there are no significant barriers to hosting T Level students but acknowledges that some staff may worry initially about the time commitment required for mentoring: "We addressed this by distributing the student's rotation across multiple departments. This not only eases time pressures but also provides the students with exposure to a broader range of career pathways."

Shaping the future of science

Pier stresses the urgent need for technical specialists to address future scientific and technological challenges: "As scientists and technicians, we have a responsibility to educate the next generation. We serve the public by advancing knowledge and technology, but we also have to ensure young people understand the wide range of career options available to them."

Agatha's story highlights how first-hand experience in a research laboratory can be transformative. By hosting T Level students, the LMB is shaping the future of science – one talented technician at a time.

Advice

- Make T Level students and their success visible. Use existing tools to promote your experience, such as Technician Commitment meetings, regular communications with technical staff and internal events.
- Visit the T Level provider and tell the students about your facilities.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R7:** investing in apprenticeship and trainee technician programmes and hosting T Level work placement schemes.

University College London

University College London (UCL) is excited to welcome its first T Level students in November 2025. Adding T Level industry placements to its technical skills development and education portfolio strengthens UCL's commitment to supporting its existing technical workforce while nurturing the next generation of skilled professionals.

The role of the Technical Skills Development Hub

UCL's Technical Skills Development Hub (TSDH) positions T Levels as fundamental to building a sustainable, talented workforce. Isabel Goncalves Cattuzzo, TSDH Manager, highlights a growing recruitment challenge: "It's becoming increasingly difficult to recruit the right people for the right roles. T Levels offer a solution, allowing students to gain real-world experience before committing to a full-time position."

A centralised, collaborative model

The TSDH was launched just over a year ago and it is already driving significant change. Positioned under UCL's Vice-President (Operations), the hub connects 11 faculties and departments, embedding technical professionals more cohesively across the university.

Isabel clarifies. "It is about creating efficiencies and establishing consistency."

The TSDH's mission extends beyond recruitment it also focuses on streamlining the T Level placement process. "We're building a structured framework for T Level industry placements," Isabel says. "Our goal is to make life easier for managers while ensuring students receive the best possible experience."

Establishing industry placements

UCL's pilot T Level programme is already in motion, with the UCL Apprenticeships Manager Uzma Sadiq working with technical managers from departments such as Biological Services, Laboratory Services, Biosciences and Pharmacy. Isabel secured their involvement through the UCL Technical Managers Group, a network of 80 professionals managing technical teams.

Through partnership with the UK Institute for Technical Skills & Strategy (UK ITSS), the T Level industry placement initiative has gained enthusiastic support, preparing departments to host and mentor students with confidence and purpose.

Placement design

A standout feature of UCL's placements is the rotation model, which will give T Level students exposure to different technical fields, allowing them to see how the work they complete while on placement impacts the respective areas of research.

Drawing on insights from early adopters of T Levels has also been vital. The current working group recommends seeking advice on practical matters such as insurance, risk assessments and choosing the right college partner.

A long-term investment in talent

UCL's plan to invest in industry placements is a long-term strategy to build a continuous pipeline of technical talent. By offering meaningful, real-world learning experiences today, UCL will strengthen both its current operations and its future workforce.

Advice

- Consider a centralised approach if possible – it can simplify the process for technical managers.
- Consider how T Level students can enter roles that typically have high staff turnover – for example, where biomedical science graduates have previously been filling junior technician positions and finding they don't suit their skill set.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R7:** investing in apprenticeship and trainee technician programmes and hosting T Level work placement schemes.

Miss Satinder Sembi, Departmental Laboratory Technical Manager, demonstrating the exciting leaps in use of technology in education at the first ever UCL Technical Staff Showcase 2023. UCL, School of Pharmacy

Chris Burling, Divisional Laboratory Manager, using a manual milling machine. University of Cambridge, Engineering Department

University of Cambridge

The University of Cambridge is reviving its apprenticeship programme with the introduction of T Level industry placements. These placements are demonstrating that technical qualifications are a viable pathway into the institution, reflecting the university's commitment to opening up new entry routes.

A new entry point for technical roles

Lucy Sinclair, Divisional Administrator for Design and Technical Services, is driving a new approach by positioning T Level industry placements as a stepping stone into apprenticeships and junior technical roles.

Lucy works in a hands-on workshop environment within the Department of Engineering and is passionate about promoting diverse entry routes into the sector: "We're not academics or researchers, we're practical technicians. We want young people to see that there are multiple pathways into highly skilled roles at institutions like Cambridge, without needing traditional qualifications or a degree."

Introducing industry placements

In 2023 the University of Cambridge welcomed its first T Level Engineering and Manufacturing student on a two-days-a-week placement that involved rotations across different teams within the Department of Engineering.

Lucy describes the process as straightforward: "The local college supported us every step of the way, handling paperwork and allowing us to focus on creating a quality, informative and engaging experience for the student."

Three students applied and were interviewed like any other staff member, which included a skills test and a facility tour. This gave them a realistic insight into technical roles and inspired them with the range of career possibilities available.

Real-world experience in engineering projects

During the placement, the T Level student made a meaningful contribution to ongoing projects. In his Civil Engineering rotation, he worked on tunnel section tests for the HS2 railway line.

"He was keen to get stuck into every task," says Chris Burling, Divisional Laboratory Manager. "From operating the gantry crane (under close supervision) to setting up instrumentation and contributing ideas, he was fully engaged."

The student also gained hands-on experience in machining on the mill and lathe, casting concrete specimens, and electrical and gauging tasks. He was trained to use a pillar drill, milling machine, lathe and powered hand tools, including a drill, driver, jigsaw, router, ratchet and table saw, along with a concrete mixer, concrete compression testing machine and CAD software (Autodesk Fusion).

Future plans

Thomas Glenday, Head of Design and Technical Services, sees long-term value in industry placements: "Providing T Level placements and recruiting apprentices is a crucial investment in our future workforce."

Encouraged by the success, the university is now planning to take on more T Level students next year.

Advice

- Conduct short interviews as part of a formal recruitment process to help students prepare for professional environments.
- Involve enthusiastic staff. Work with colleagues who are open to new ideas and passionate about mentoring and inspiring the next generation.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R7:** investing in apprenticeship and trainee technician programmes and hosting T Level work placement schemes.

University of Liverpool

Hosting T Level industry placements has had a profound impact at the University of Liverpool. From offering a summer job to a placement student to reshaping its admissions policy, the university's experience highlights how T Levels can help bridge the gap between education and meaningful career opportunities.

A life-changing opportunity

For Jan Brett, Faculty Strategic Technical Lead in the Faculty of Health and Life Sciences, the success of the T Level placements is deeply personal: "it was a really successful moment when we encouraged a faculty to consider T Levels as an entry requirement for their Marine Biology BSc undergraduate course and they agreed."

Will Cooper, joined the team in the School of Environmental Sciences on an industry placement as part of his Science T Level in January 2024. He made such a strong impression that he was offered a casual summer research contract after just five months.

T Level student carefully weighing out media on the analytical balance. University of Liverpool, Health and Life Sciences

As a summer research assistant, Will supported two academics on a project focused on the hydrology and water quality of Tatton Mere. In addition to applying skills developed during his placement, he also learned to use Near Infrared Spectroscopy (NIRS), contributing significantly to laboratory work on sediment core samples. Will's work was key to meeting tight deadlines, and his dedication left a lasting impression. Will has applied to study Marine Biology at the University of Liverpool from September 2025.

Expanding the T Level programme

During a pilot, the University of Liverpool hosted seven T Level Science students. Students were placed across departments including the Central Teaching Labs, the Materials Innovation Factory (MIF), Veterinary Anatomy, Physiology and Pathology, the Institute of Life Course and Medical Sciences, the Electron Microscopy Unit and the School of Environmental Sciences. The placements were so successful that the programme is now expanding into the engineering workshops.

Gaining support from technical staff

Oliver Prowse, Technical Support Officer at MIF, highlights the importance of showing colleagues how placements can support, not hinder, technical teams: "We addressed this by showing them how the student was well-prepared to assist, making their workload easier, not harder."

A long-term vision

Jan sees wide-ranging benefits from hosting placements: "It's been great for the institution, for the students and for our technicians who gain experience in managing someone, which could help in future promotions."

She also recognises the national context: "We know we need to recruit more technicians nationally, so anything we can do to engage with that will help."

The University of Liverpool is already a leader in developing career pathways for technical specialists. With a new framework that defines career progression from entry-level roles for 16-year-olds through to senior positions, hosting T Level placements aligns perfectly with its commitment to technician development.

"Many of our T Level students hope to continue their studies at undergraduate level," Jan concludes. "And if students return to us, or any other university, as part of the technical workforce, then I think we will have done our job in creating that pipeline of talent."

Advice

- Communicate the benefits, highlighting how supervising students can support, not burden, technical staff.
- Safeguarding is often a perceived barrier, not an actual one. Address safeguarding concerns and reassure staff that appropriate policies and procedures are already in place.

Impact

- **Sustainability:** building a next-gen talent pipeline that brings fresh, young talent into the technical workforce.
- **TALENT Commission R1:** taking a strategic approach to ensuring the sustainability and appropriateness of technical skills and careers at both a local and national level by investing in a new pipeline of technical talent.

> "placements can support, not hinder, technical teams."

The University of Manchester

At The University of Manchester, hosting T Level placements is not only inspiring young people, it's also re-energising technical staff. "It has allowed my team to develop professionally and personally," says Michael Hughes, the university's Chemistry Teaching Technical Specialist.

Empowering staff through mentorship

Michael is passionate about nurturing the next generation of technical professionals. From the start, he involved senior technical staff in shaping T Level placements and gave them ownership of the process: "It has been fantastic to see members of my team wanting to get so involved.

Hosting T Level students on a daily basis gives technical staff valuable mentoring experience to enhance their CVs.

Opening pathways for T Level students

Two T Level Science students are considering applying for apprenticeships at The University of Manchester this summer. Michael believes their placement experience gives them a strong advantage.

Placement design

Students attend the chemistry teaching laboratory one day a week, with no more than two students present at any time. This careful planning ensures the placements remain manageable for staff.

Michael invested time upfront in designing a meaningful programme:

- **Week 1:** Health and safety induction
- **Week 2:** Basic laboratory skills such as measuring, making solutions, purification and distillation
- **Week 3 onwards:** Hands-on technical training

"After inducting and training students for three weeks, they become a very valuable extra pair of hands," Michael says.

Placement activities

Students begin with fundamental analytical chemistry tasks such as solution preparation, titrations and saturations. Then they progress to operating industry-standard chromatography equipment. In the final stage of their placements, students are encouraged to pursue specific areas of interest to deepen engagement and tailor their experience.

Seeing the spark

One of the most rewarding parts of the process for Michael is watching the students realise they've found something they love: "It's like a spark goes off inside them. They're like, 'Oh, I've found this little niche area that's really interesting.' I always love seeing that in anyone."

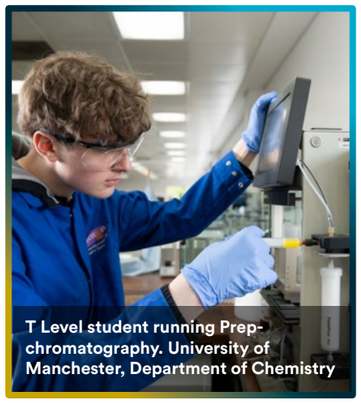
Michael has always championed the value of T Level placements, not only to inspire students but also to promote the vast array of technical careers in science to the next generation. He sees the initiative as a meaningful way to give back while helping to address skills needs at local, regional and national levels.

Advice

- Start small – don't overcommit to too many students at once.
- Plan ahead – set aside time to design meaningful placement activities that benefit both the student and your team.

Call to action for other universities

Some institutions may choose to organise industry placement programmes centrally, while others may empower individual departments to develop their own offer. Michael encourages other universities and research institutes to get involved, whichever model suits them best: "This is really worthwhile. It adds to your team and your lab in ways you can't even imagine. It's re-energised members of my staff. With departmental support and passion, it can work, and you don't need to wait for university-wide backing."



T Level student running Prep-chromatography. University of Manchester, Department of Chemistry

Impact

- **Career development of technicians:** supporting the growth and development of technical staff.
- **TALENT Commission R7:** investing in apprenticeship and trainee technician programmes and hosting T Level work placement schemes.

University of Warwick

Darren Grant, Technician and T Level students, showcasing EDM capabilities within the IMC Workshop. University of Warwick, WMG

At the University of Warwick, stories of student transformations demonstrate the impact that a high-quality technical education can have on someone. Students like Millie Reid who stood out among 40 candidates to secure the first-ever T Level industry placement at WMG (Warwick Manufacturing Group).

Supporting student development

When Millie began her T Level placement, Paul Johnson, Senior Technical Services Manager and Deputy Director of Technical Strategy, remembers her as a reserved and quiet individual, nervous in the technical environment: “Watching her grow into a confident individual, able to attend a selection day and then talk confidently about the skills she’d developed, was a remarkable transformation.”

Millie’s achievement is just one example. Another T Level student has secured a competitive position with a major local automotive manufacturer.

Warwick’s commitment to T Levels

Since beginning its T Level initiative, the University of Warwick has hosted twenty-three T Level students, with a plan to continue welcoming eight students annually through the Design and Development for Engineering and Manufacturing T Level. The university is also preparing to launch placements in Agriculture, Land Management and Production.

Valuable technical experiences

T Level students at Warwick benefit from a wide range of hands-on experiences, including computer-aided design (CAD), computer-aided manufacturing (CAM), CNC machining, laser cutting, 3D printing, and materials testing (such as polymers, aluminium and steel).

One particularly memorable project involved students in designing and manufacturing the Flame of Friendship torch, an art installation designed to replicate the stained-glass windows of Coventry Cathedral with a symbolic artificial flame.

Paul explains “They manufactured it using laser cutting, 3D printing, and bench fitting and machining, creating press-fit joints to assemble the structure.”

The mentor role

For Paul, one of the most significant factors in the success of T Level placements is the role of mentors. However, he notes “The number one barrier was convincing technicians of how much they can contribute. Many don’t realise the knowledge and experience they can pass on even just by being shadowed.”

To address this, Paul engaged junior, entry-level staff to act as mentors, a strategy that proved highly effective: “When senior staff saw how well they mentor, it inspired them to do the same.”

Investing in the future workforce

Paul believes that T Level placements are a long-term strategy for workforce development: “T Level placements are not just a recruitment tool, they’re a strategic investment. By supporting these students today, we’re building a stronger, more skilled workforce for tomorrow.”

Advice

- Consider your placement model carefully. Warwick opted for a day-release format and ensured that apprentices and T Level students attended on different days. This avoided overlap and competition, allowing each group to thrive.
- Start with staff who share the vision, you need to have the right people on board as mentors.

Impact

- **Visibility:** showcasing the contribution of technicians within and beyond the institution.
- **TALENT Commission R15:** technical staff are engaging positively with current and future opportunities while technical managers are supporting their teams, encouraging participation and celebrating successes.

UNIVERSITY OF WARWICK

Supporting T Level industry placements: How to get started

Review the available resources below to develop a clear understanding of what hosting a T Level industry placement involves.

Contact Jo Hartley-Metcalfe (**Jo.Hartley-Metcalfe@itss.org.uk**) for further guidance and tailored support.

Initiate internal discussions to begin shaping your institution’s approach to T Level industry placements.

Sector support and resources

Hosting T Level industry placements within a university or research institution setting is a valuable opportunity to support technical education, strengthen workforce pipelines and showcase the breadth of expertise across the sector. A range of tailored resources are available to guide institutions through the process and support the successful delivery of placements.

UK ITSS has developed a sector-specific resource hub to assist universities in preparing for and hosting T Level industry placements. These materials are designed to reflect the unique context of higher education settings.

Access the T level toolkit for universities and research institutes and read in-depth case studies for more best practice, advice and impact:
itss.org.uk/university-t-level-placement-toolkit

The Department for Education also offers a comprehensive suite of guidance and resources for organisations hosting T Level industry placements:
employers.tlevels.gov.uk/hc/en-gb

To stay informed about developments related to T Levels and wider technical education policy, institutions can subscribe to the UK ITSS newsletter and view additional updates at:

itss.org.uk/contact-us

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Institutions hosting and preparing to host T Level industry placements

Aston University BIRMINGHAM UK

Brunel University of London

UNIVERSITY OF CAMBRIDGE

University of Chester

Coventry University

Cranfield University

DE MONTFORT UNIVERSITY LEICESTER

Durham University

Earlham Institute

University of Exeter

THE FRANCIS CRICK INSTITUTE

John Innes Centre

Keele UNIVERSITY

University of Kent

UKRI MRC Laboratory of Molecular Biology

UCL

UEA University of East Anglia

UNIVERSITY OF LEEDS

UNIVERSITY OF LEICESTER

UNIVERSITY OF LIVERPOOL

LSTM LIVERPOOL SCHOOL OF TROPICAL MEDICINE

MANCHESTER 1824 The University of Manchester

Manchester Metropolitan University

University of Nottingham UK | CHINA | MALAYSIA

Newcastle University

Northumbria University NEWCASTLE

University of Portsmouth

Queen Mary University of London

University of Salford MANCHESTER

UNIVERSITY OF WARWICK

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