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THE Tech Magazine

THE MAGAZINE OF THE IST

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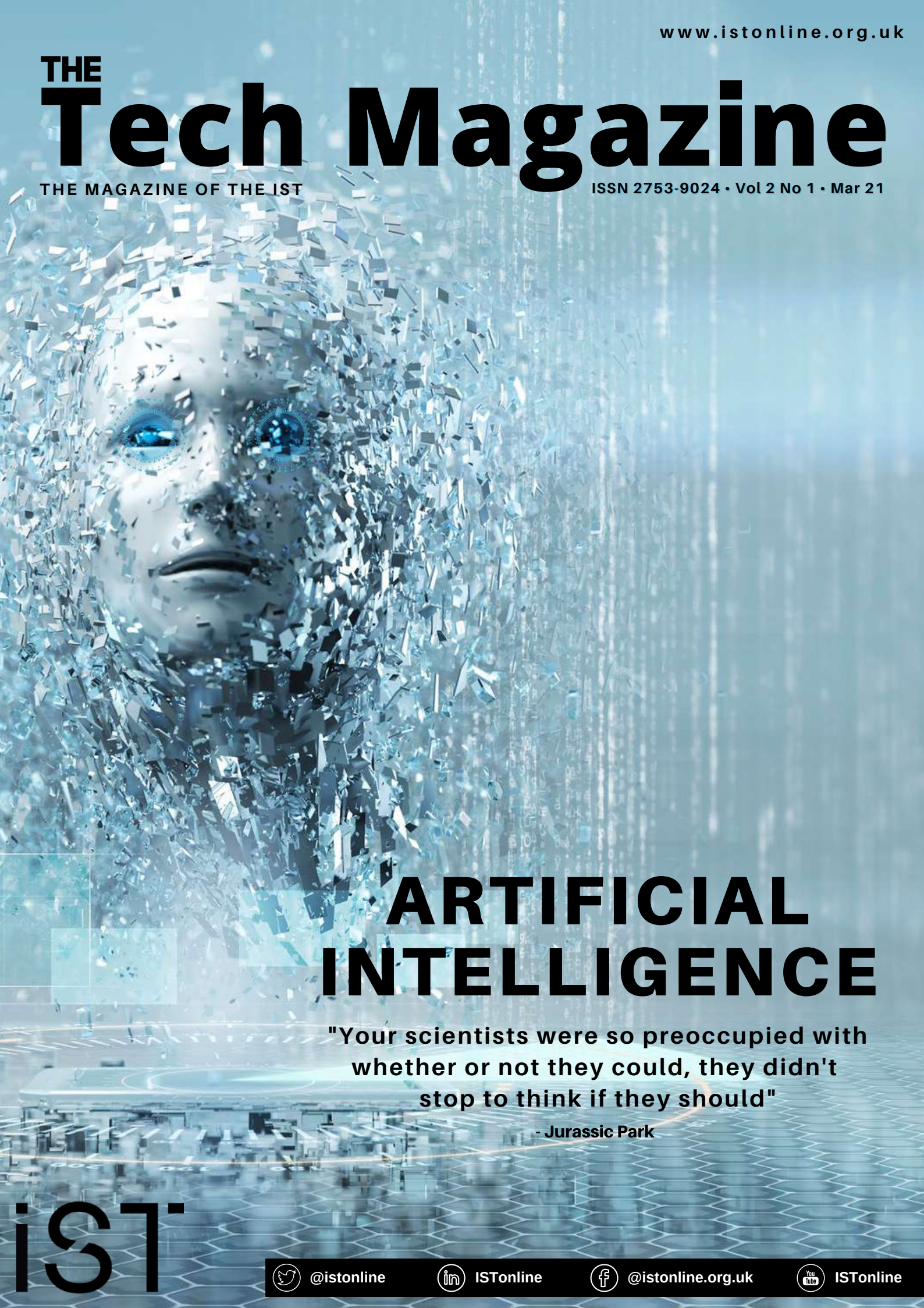

ARTIFICIAL INTELLIGENCE

"Your scientists were so preoccupied with whether or not they could, they didn't stop to think if they should"

- Jurassic Park

IST

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THE Tech Magazine

The magazine for, and made by, the technical community.

THE Publications
THE Publications
THE Publications

PUBLICATIONS: MARCH | JUNE | SEPTEMBER | DECEMBER

The IST **eNewsletter** has gone from strength to strength in design and content and has naturally changed from being a traditional newsletter into an established magazine over the last five years. We wanted to thank everyone for their positive and encouraging comments. The content has been popular in representing the technical workforce from different sectors. We wanted to take this one step further, hence the transition to **The Tech Magazine**, to give technicians a publication they could contribute to, as well as ensuring the technical community is well represented. We want to keep adapting all our publications to be useful for your work and career. Please let us know if you have any feedback or opinions.

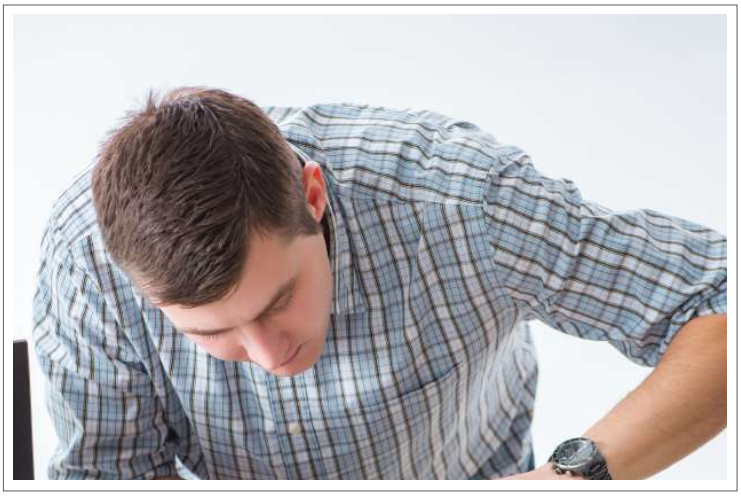
IST members can contribute with articles of interest / opinion pieces or research and information blogs. Members can advertise their projects, awards, or even advertise or offer an advert for their organisation.

MAGAZINE WALL OF CONTENTS

UPDATES & NEWS | INDUSTRY | BUSINESS
RESEARCH INSTITUTES | CONSULTANCY
COLLEGES | HIGHER EDUCATION | SCHOOLS
#TECHNICIANJOURNEY | AWARDS
E-ARTICLES | CREATIVE | ENGINEERING
SUSTAINABILITY | DIGITAL | SCIENCE
OUTREACH | ENGAGEMENT | DEI
TRAINING & RESOURCES | CPD CORNER
EVENTS | ARCHIVE | CROSSWORD

THE TECHNICAL COMMUNITY

Giving technicians the visibility & recognition they deserve



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The Millennium Seed Bank Project, Kew Gardens

WELCOME TO YOUR MEMBERSHIP MAGAZINE

Volume 2 Number 1
March 2021

This magazine is made for, and made by, the technical community.

CALL TO MEMBERS:
If you want to publish an article or are interested in joining the team, contact us at the office, we would love to hear from you.

For details contact
j.p.ashton@istonline.org.uk

Advertising in The Tech Magazine is given to our members free of charge. We have advertising offers available to non-members and anyone interested.

To advertise in this magazine, contact
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The Tech Magazine is produced on behalf of the Institute by Ashton Consulting.

Views expressed in this magazine are not necessarily those of the Editorial Board or the Institute.

Cover image: 'Artificial Intelligence: the future of AI'.

Thank you for everyones contribution to this edition of the magazine. We have included a feedback form so that members can let us know what they want from the magazine and Journal.

CLICK HERE TO FILL IN FORM

WELCOME

Dr Helen Sharman CMG OBE FIScT FRSC

PRESIDENT'S MESSAGE

There is still a way to go but every day, that light gets brighter and more colourful

Dr Helen Sharman, FIScT
IST President

Stories of vaccinations across the country are heralding hope of a sociable summer, days are beginning to stretch into evenings and we in the UK are glad to see light at the end of the tunnel of Covid. There is still a way to go but every day, that light gets brighter and more colourful. (No more tunnel analogies now!) I am sure we all wish friends and colleagues around the world a speedy route out of the pandemic. In the months and years to come, we will learn much from the different ways that Covid has been managed and its multitudinous effects on society.

In March and April a year ago, talk was of a 'new normal'. But with all the changes and adjustments we have had to make, I wonder if anyone has had chance to settle into a pattern that can be considered 'normal'. Just as one set of operations appears to be accepted, another change is just round the corner. Someone once told me that people working in IT are the most accepting of change because rapid technology development and take-up of new IT resources means IT jobs depend on change: if things are not changing, IT folk worry. Now I think we have all come to terms with change in our own ways.

Much though our working lives have been beset by change, our social lives pretty much have come to a standstill.

Marking time is one of the ways astronauts cope with the long haul of social isolation and birthdays, Christmas and special anniversaries are welcomed as a way to make the day a memorable part of the calendar. March is usually a busy time with British science week (now 10 days long - how did that happen?), but we also have some notable internationally-recognised days such as Women's Day on 8th, Down's Syndrome day on 21st (a Down's Syndrome charity is currently designated by the IST) and coming up on April 21st - World Creativity and Innovation Day. There is plenty to talk about on yet another virtual family Zoom meeting, should you need any ideas!

While Covid has been tragic for some, its effects have been far and wide for many. Let's keep on being kind to each other and to ourselves. It was great to hear of Kelly Vere's MBE in the New Year's Honours List and of Alison Hunter's recent IST Fellowship, which are just two examples of high-flying technicians, but still too often the work of technicians goes unrecognised. If you think your work or someone else's deserves to be noticed - tell someone about it, and if there's an IST member involved, tell us as well!

Helen.

TERRY'S BLOG

A Spring Message

I hope you and your families are well and have managed to keep clear of Covid-19. Since my Christmas message, the country has made great strides in tackling this unprecedented pandemic, particularly the approval of a number of vaccines. As we approach Spring, quite a number of our members, their families and colleagues have now had their first injection, their children have been able to return to school and the countdown to getting back to some form of normality is well on the way. So, plenty to be positive about. As we start to exit lockdown, I want to thank all our members for the support, kindness and patience they have showed to our team, volunteers and fellow members over the last twelve months as we have adapted the way we work and kept providing the services and support our members have come to expect from their professional body.

Taking the positives forward, we are currently planning for this years IST Conference in September and we welcome Sandra Taylor from Manchester University to the Conference Committee as our latest volunteer. A good opportunity to say again that if you would like to join our team of volunteers and play your part in your professional body then please contact a member of the Executive team or email the IST office.

We are also looking forward to supporting our members in their professional registration and supporting applications in the 2021 Science Council CPD Awards. Again, for those considering applying for professional registration then please email registrations@istonline.org.uk and we will provide the necessary support to make a successful application.

As an organisation, we are continually reviewing how we operate particularly in respect to the Climate Change Emergency. From the simple things like “do we need to print that document” to reduction in travel to meetings and sustainable procurement. We can all do our part in helping to reduce our environmental impact and we look forward to listening to our colleagues giving their views at our next Annual Conference in September. The outline programme is taking shape as we speak, so remember to keep a regular eye on our website to keep up to date with all our activities including member focussed CPD support, virtual workshops and that helping hand in making your professional registration application a smooth process. I can assure you that our fantastic team of volunteers are still here for you, whether it’s online, over the phone and hopefully later in 2021 in face-to-face meetings. Remember to watch out for the “Bulletin” in your Inbox for all the latest news, updates and events.

As we enter our final weeks of a full national lockdown, our lives are slowly adjusting to positive changes. There’s no doubt that this has been a very difficult time for everyone, but with the support of colleagues, our families and friends, we hopefully have seen the end of the pandemic. Life has changed significantly by the impact of Covid-19 and we may have to continue to follow certain basic rules, but a new normality is on its way for all to embrace. So, may I wish you all a great summer and look forward to seeing you, albeit virtually at the moment, at one of our future events.

With best wishes,

Terry.

As an organisation, we are continually reviewing how we operate particularly in respect to the Climate Change Emergency

Terry Croft, FIScT
IST Chair

THE RUNDOWN

MEMBER UPDATES AND CURRENT NEWS

We hope you enjoyed the last magazine and we hope you enjoy this edition. Please let us know what you would like to see in your publications? We would like the magazine to adapt to be a useful resource and information centre for technical staff all over the UK and overseas.

The Tech Magazine, also known as The Technician Magazine has naturally evolved as a result of the newsletter's success. This is one of the two publications that our members and external individuals can contribute to, the other being the Journal, which will be released in June 2021.

Annual General Meeting

Attendance at the AGM is welcome to all our members and is taking place on Thursday 29th April 2021. If you would like to register to attend the AGM, click here.

The Journal

We would like to recruit technicians from engineering and creative backgrounds to join the Editorial Board so that we can keep our publications in-line with each of the different disciplines. Expressions of interest should be sent to office@istonline.org.uk.

The Bulletin

We hope that everyone received the Bulletin in February. This is our communications e-newsletter that will give our members regular news, updates, events, policy, and articles of interest in each of the technologies.

THE Bulletin

Women in Tech / AI Group

The creation of new exciting groups is being steered by Marie Oldfield and is promising to provide an area for members who have an interest to contribute to the wider field and Government. More information is coming soon.

Registrations Standards

For IST registrants, the Science Council have updated their registration standards. These changes will be brought into place from 2022. We are looking at organising training as well as information sessions to assist with a smooth transition.

Technical Conference 2021

To ensure the safety of everyone involved, we will be holding our national conference on 15th September online again. The committee are meeting up from April to take the planning forward, if you would like to be involved please contact the office.

Policy

Many of the IST Executive are involved with national and Government groups. The IST will be using 2021 to influence policy more on behalf of the technical workforce.

We are working with our partners the National Technician Development Centre (NTDC) to put new EDI policies in place. We hope to continue to influence the sector on professional technical training, as well as endorsing new courses and working to support the work of Apprenticeships and T-levels. We are also hoping to focus on sustainability and climate change projects too.

Please contact us if you would like to get more involved with your IST.

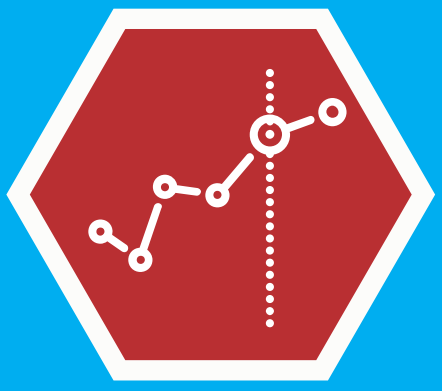
HIGHER DIPLOMA.

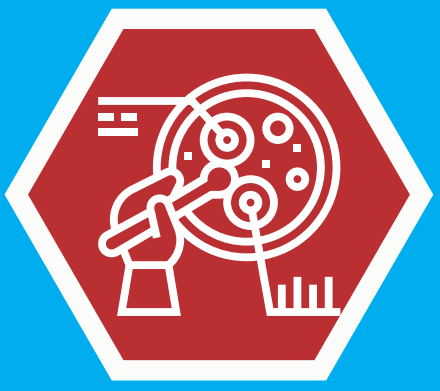
The IST's Higher Diploma is a recognised qualification for the specialist technician working in specific science areas:

- **Analytical Chemical Laboratory Techniques**
- **Biochemical Laboratory Techniques**
- **Microbiological Laboratory Techniques**

PROJECT DEADLINE: 30TH MAY 2021

The contents of the Higher Diploma is to enhance technical skills and focuses on in depth knowledge of the technique and its application.





OPEN TO MEMBERS AND NON-MEMBERS

Service Industry: The Environment Agency

SERVICE: Water Authority

The Environment Agency work to create better places for people and wildlife, and support sustainable development.

Within England the Environment Agency are responsible for:

- regulating major industry and waste
- treatment of contaminated land
- water quality and resources
- fisheries
- inland river, estuary and harbour navigations
- conservation and ecology

They are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.

The Environment Agency has many different responsibilities including running the National Laboratory Service (NLS), a leading provider of high quality environmental testing and analysis. They offer excellence in Science, industry leading customer Service and tailored analytical solutions designed to meet the needs of customers. The NLS operates with three laboratories located in Exeter, Nottingham and Leeds.

Other laboratories that exist within the Environment Agency include the Health Surveillance Laboratories and the National Fisheries Laboratories.

Credit: Pete Fox, Environment Agency

Since early 2020, the UK has been carrying out wastewater monitoring for COVID-19. Wastewater samples are collected regularly across the country and analysed for SARS-CoV-2, the virus that causes COVID-19. Wastewater monitoring is part of monitoring systems to detect new COVID-19 outbreaks and support test and trace approaches.

The testing is being led by the Environment Agency's Starcross laboratory in Exeter and Bangor University. As of October, 44 wastewater treatment plants are monitored, covering 22% of the English population, with sampling across the sewer networks in several towns and cities, and plans to expand the monitoring programme to cover 80% of the population.

The Research Institute Technician Group (RITG)

The Research Institute Technician Group (RITG) is a consortium of nine Technician Commitment (TC) signatory Research Institutes.

The organisations represented are:

- The Institute of Cancer Research,
- The Babraham Institute,
- The Francis Crick Institute,
- The Wellcome Sanger Institute,
- The John Innes Centre and
- The MRC Institutes (including Harwell, the London Institute of Medical Sciences and the Laboratory of Molecular Biology)
- The Science and Technologies Facilities Council

The Institute of Cancer Research

The ICR employs over 450 highly skilled technical staff with a broad range of expertise. Their technical staff play a crucial part in the scientific research achievements of the ICR. They have worked tirelessly to organise the closing and re-opening of the labs during COVID.

The Babraham Institute

There are approximately 400 Individuals working at Babraham, defined as: Employees (PhD students, Research Fellows, Honorary Members of Faculty, visiting students, visiting researchers and workers). The staff who provide core technical excellence are considered part of the technical community.

The Francis Crick Institute

The Francis Crick Institute is a biomedical discovery institute dedicated to understanding the fundamental biology underlying health and disease. There are over 570 technical staff at the Crick.

The Wellcome Sanger Institute

The Wellcome Sanger Institute use information from genome sequences to advance understanding of biology and improve health. They have over 490 employees based in roles that they identify as Technicians.

The John Innes Centre

Research and support staff make up the largest proportion of Professional and Technical Staff at the John Innes Centre. Most of the 200 individuals work in laboratory based roles.

Medical Research Council

The MRC have around 150+ technicians (or technical experts) within various disciplines. The MRC Institutes include MRC Harwell, the MRC London Institute of Medical Sciences and the MRC Laboratory of Molecular Biology

The RITG is therefore made up of over 2,000 technicians, which is a significant proportion of the technical community.

Key Links:

The Research Institute Technician Symposium (2019)
RITG Update and Networking event (2020)
Exploring the benefits of a skills database for your organisation (2021)
Find and follow the RITG on twitter: @TechnicianGroup

The life of a school science technician

My name is Stacey and I am a science technician in a school. I have been doing this job for nearly 12 year now and in 4 different schools. I am lucky enough to work in a beautiful part of the world, Cornwall. When I started this job I didn't know the difference between a boiling tube and a test tube, I hated science in school and was scared of the Bunsen burners! The head of the school I had my first job in said to me "You will probably be making cups of tea for teachers most of your day" I didn't know how wrong he could have been, but, also at the same time I was shocked at just how little he knew of the role when I found out just what being a science technician in a school involves. From that moment, I have been trying to figure out ways of raising the profile of technicians. There have been so many studies and papers released on this which are, still, unfortunately having no impact on the recognition of the role.

When I started this job I loved it from day one, and I knew I was going to put my all into it and do what I could to help the people I worked with but also the students. We all know that it can be hard to get students to go into a Science, Technology, Engineering, and Mathematics (STEM) career when they leave school; so, I have made it my mission to get as many extra opportunities as possible going in the schools I have worked in to try and engage students in these future career options that they may not have even thought of for themselves, or even worse, didn't know existed. Some examples are:

- Planning and running science-based trips (Big bang event, zoo's colleges and universities etc)
- Starting and designing a science club with a scheme of work (SOW) which I researched and made, with over 100 science practicals (extra to what students do in normal lessons, including technology and engineering aspects)
- Running a careers event where students could talk directly to people in STEM careers
- Eco club
- Poly tunnel club
- Running CREST Awards (STEM subjects)

I not only reach out to secondary school students, but I also actively encourage local primary schools to borrow science equipment from us to enable them to teach practical science lessons! I think this is really important to engage the younger generation to be hands-on with Science and other STEM-related subjects.

As we all know, COVID-19 has put a stop to schools and practical work in many cases, so I am sending 3 practicals a week the students can do from home to some primary schools in the area, and also sharing this on a community page on the STEM centre website to help people through this difficult time.

When I lived in Nottingham I knew there were schools close by, but I didn't know the technicians who worked in them! I spoke to Julie, a local rep from Science Laboratory Supplies Ltd (SLS) who supply science equipment to schools as I knew she would know them! SLS offered their HQ office which was based in Nottingham as a venue for

us, for free, to use for meetings if I could get them off the ground. So I picked a date and sent out letters to all the local schools I could find information for. I had a brilliant response; one day 27 people attended. I tried to run 3 or 4 of these sessions a year. The plan for the days varied: we had at least one form of CPD session, and a special guest for the day (a favourite was Neal from the IOP, he bought lots of 'make and take' sessions, very hands on). There were opportunities to have a go at using some equipment and seeing how to use things that people were a little unsure of (this was a bonus of being in the building of a science equipment supplier; they could get these things out so we could have a try before you buy session!). And always a Q and A session at the end where people could get advice and help on things they were unsure of. I ran a session where everyone could have a go at all the required practicals and take away working methods and results.

CPD is such an important part of our job, so I would love to be able to run these session nationally for all technicians. I was very lucky to get a venue and people who were willing to help for free; I know that is not possible everywhere. The feedback was amazing and everyone seemed to take something away from them (Including freebies from the hosts!). Our job is so diverse that any training opportunities are a bonus; I still learn new things even after doing the job for as long as I have.

I am now an associate facilitator for the STEM learning centre; for this role I lead 2 technician Groups and train them as well as planning and designing new training sessions for these and other techs and teachers. I wrote a 5 hour session for prep room management during the first lockdown due to the COVID-19 pandemic, and I have won an award this year for the work I do outside of my main job role.

The things you have been reading about so far have nothing to do with my job role, these are extra things I have taken on as well as my day to day duties. As a science technician my main role is to provide practical work for teachers to use in their lessons. I cant imagine a teacher working in a school where they don't have this help. On top of this I have many other things I do (especially as a lone technician with 10 science teachers to look after, some part time!): some daily tasks, others are as and when they arise. I will try and give you an insight into some things we do.

As many people are aware, we work alongside science teachers and provide them with the practical equipment for their lessons.

This is not just putting it in a tray and handing out. Most of this stuff is specialist equipment that needs great care and upkeep. If something is broken, chances are we fix it. The chemicals used in these lessons don't arrive ready to go. Some need diluting from concentrated acids, some need preparing from solid solutions, all of which takes skill and a lot of PPE in some cases! We also bring new ideas into school, and train teachers on practicals they are unaware of, or have never tried before. Some technicians may even be asked to research new ways of doing a practical or to find new and exciting things to do in the classroom.

Technicians are also demonstrators, this could be because a teacher is unfamiliar with the demo, isn't comfortable doing it, or the technician loves to get into the classroom. We can be Teaching Assistants (TAs) for the science teacher too when practical work is happening - it is always good to have an extra pair of hands…. and eyes!

In my personal experience I have found that trainee science teachers come into schools with a lack of practical work experience and little knowledge of risk assessments. There are many technicians out there who take on this role of training the trainee teachers in how to carry out a practical.

Sometimes in our job we can get bogged down with paperwork/ stock checking. This can range from orders for the department to stock checking the chemical store! We risk asses our job role according to the environment we work in. Some of us even do the PAT testing. Some of these can be very time-consuming; I generally do them in the summer term when practical requests are in less demand. We follow H&S guidance from CLEAPSS (Consortium of Local Education Authorities for the Provision of Science Services) - there are hundreds of pages, if not thousands of health and safety things to consider as well as training.

During the Coronavirus pandemic it has been extremely difficult and time-consuming to give out safe practicals. We have had to follow rigorous H&S advice about what can and cannot be done, with a strict cleaning or quarantining regime for things that have been used. This has led to our job taking much longer in some cases and has even restricted the amount of practical work that has been done. I have even been doing break/ lunchtime duties as well as trying to keep up with my own job. I am also now a tester in our COVID test centre on site where staff and students have the lateral flow test.

Stacey Wheeler, MIScT

Stacey is a School Science Technician working in Cornwall

We are not glorified butlers, we are not tea makers, we are not pot washers. I welcome anyone from any background to visit me in my prep room to find out just what a school science technician does!

An Interview with Samuel Evetts

Samuel Evetts, MIScT

Samuel is the National Institute for Health Research (NIHR), Health Protection Research Unit (HPRU) in Respiratory Infections Manager, Imperial College London

Tell us about the HPRU in Respiratory Infections

The National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) in Respiratory Infections, Imperial College London, in collaboration with Public Health England, is one of the nation's leading respiratory infections research response units. As a result of the current COVID-19 pandemic, the HPRU is as at the forefront of COVID research. The COVID-19 virus, SARS-CoV-2, quickly spread to cause a global health emergency, yet we know very little about how the virus spreads in households, the immune response to it and why different people experience such diverse outcomes after infection. The HPRU is therefore currently addressing these fundamental public health questions through two major research projects:

1. **Integrated Network for Surveillance, Trials and Investigations into COVID-19 Transmission (INSTINCT).**
2. **Assessment of Transmission And Contagiousness of COVID-19 in Contacts (ATACCC) - Chief Medical Officer commissioned.**

The findings from these studies will inform exit strategies from lockdown, guide longer term control of infection beyond lockdown, optimise test, trace and isolate policies and accelerate development and evaluation of vaccines in readiness for increased community transmission following relaxation of social distancing measures.

What do you do at the HPRU?

I am incredibly proud of the work I do at Imperial College. My work includes leading the day-to-day initiation, management and execution of HPRU-related project activities. This involves working closely with research theme leads, research teams, nursing teams and Public Health England. I contribute to the strategic discussions and decision-making process concerning the goals and vision of HPRU. I am involved in all aspects of new HPRU recruitment, HPRU financial monitoring and HPRU patient and public involvement and engagement lead.

What makes your role so vital at the HPRU?

I like to think I help keep the wheels of progress turning. As a result, our very talented and dedicated nurses, technicans, and research scientists can focus on what is really important: addressing the HPRU's important public health questions and disseminating the results and knowledge we have gained to Public Health England, policy makers, the wider scientific community and the general public.

What did you do before you became HPRU Manager?

I was employed by the Oxford Parkinsons Disease Centre (OPDC), Nuffield Department of Clinical Neurosciences, Univesity of Oxford for a little over 10 years, in which I started my career as a Research Technician and later promoted to Laboratory and Biobank Manager. www.opdc.ox.ac.uk

What important roles do the HPRU technicians carry out?

Our technicians are critically important to the success of our research effort. They are currently examining how immune response correlates to COVID-19 disease outcome and symptom severity. This involves a wide range of techniques (including flow cytometry, cellular work, viral culture), processing a variety of samples derived from our study particpants. Additionally, they are using air and hand swab samples to determine mechanisms of transmission and secondary infection. Importantly, we promote a culture in which our technicians are given the opportunity to disseminate knowledge to healthcare policy makers, the wider scientific community and the public.

Interested in collaboration, work experience or public and patient engagement opportunities? Would you like to hear more about the HPRU in Respiratory Infections?

Do not hesitate to get in touch: s.evetts@imperial.ac.uk | Website link

Why did you choose to start your career as a research technician?

In laboratory-based research, becoming a research technician is a great way of gaining exposure to a wide variety of experimental techniques and applying them to real-world research questions, and this was something I was eager to learn coming out of my MSc in Biomedicine from Lancaster Univeristy. I was lucky to be given higher levels of responsibility very early on in my career as a technician; in addition to learning a wide range of experimental techniques investigating mechanisms of pathogenesis of Parkinson's Disease, I initiated and managed the OPDC laboratory and biobank. On reflection, my past experience as a technician and scientific training allows me to understand the scientific and public health questions being addressed, engage meaningfully with our numerous technicians in the HPRU and understand the care and attention required when acquiring, transporting and storing clinical samples.

Imperial College London

Performing a FluoroSpot assay to measure immune responses in COVID-19 samples.

Filling the liquid nitrogen dewars with COVID-19 research samples, therefore maintaining long-term sample integrity.

HPRU in Respiratory Infections Technicians using a fume hood and harvesting cells from the blood of COVID-19 study participants.

Institute of Science and Technology Branches

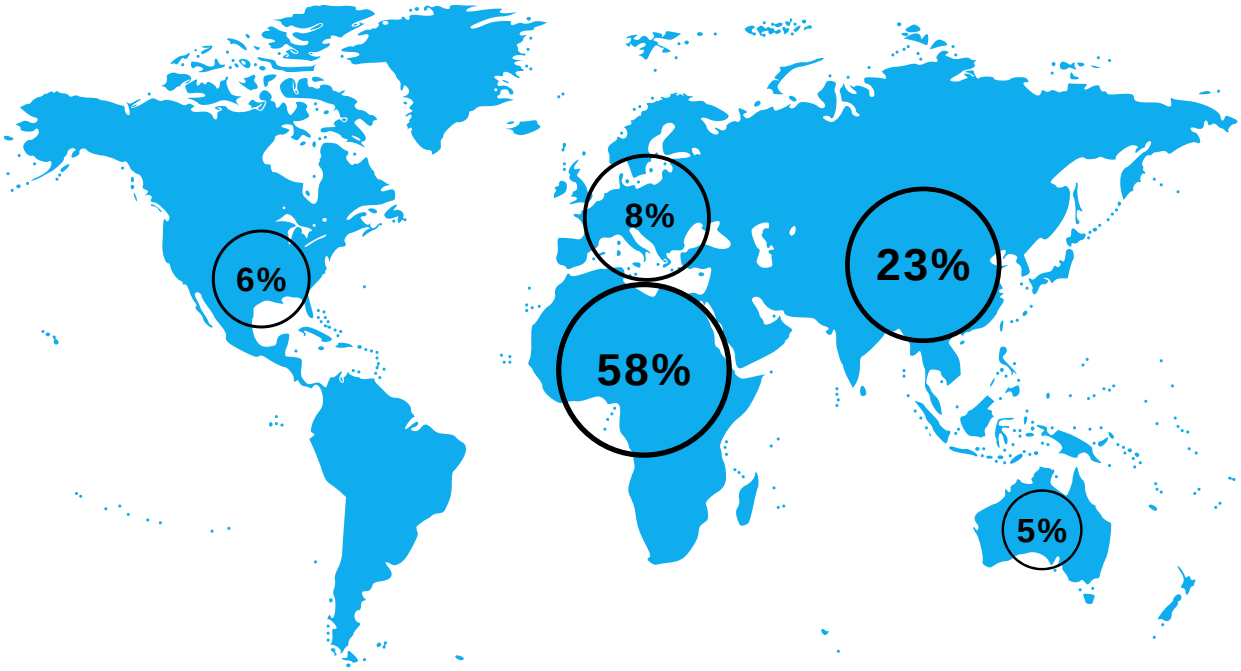
Overseas we have many members who are part of Higher Education and Industry in Africa. These members are mostly based in Ghana and Nigeria

To name a few academic institutions, IST members work at the University of Ghana, Ambrose Alli University, the Federal University of Dustinma, the University of Ibadan and the University of Calabar, to name a few.

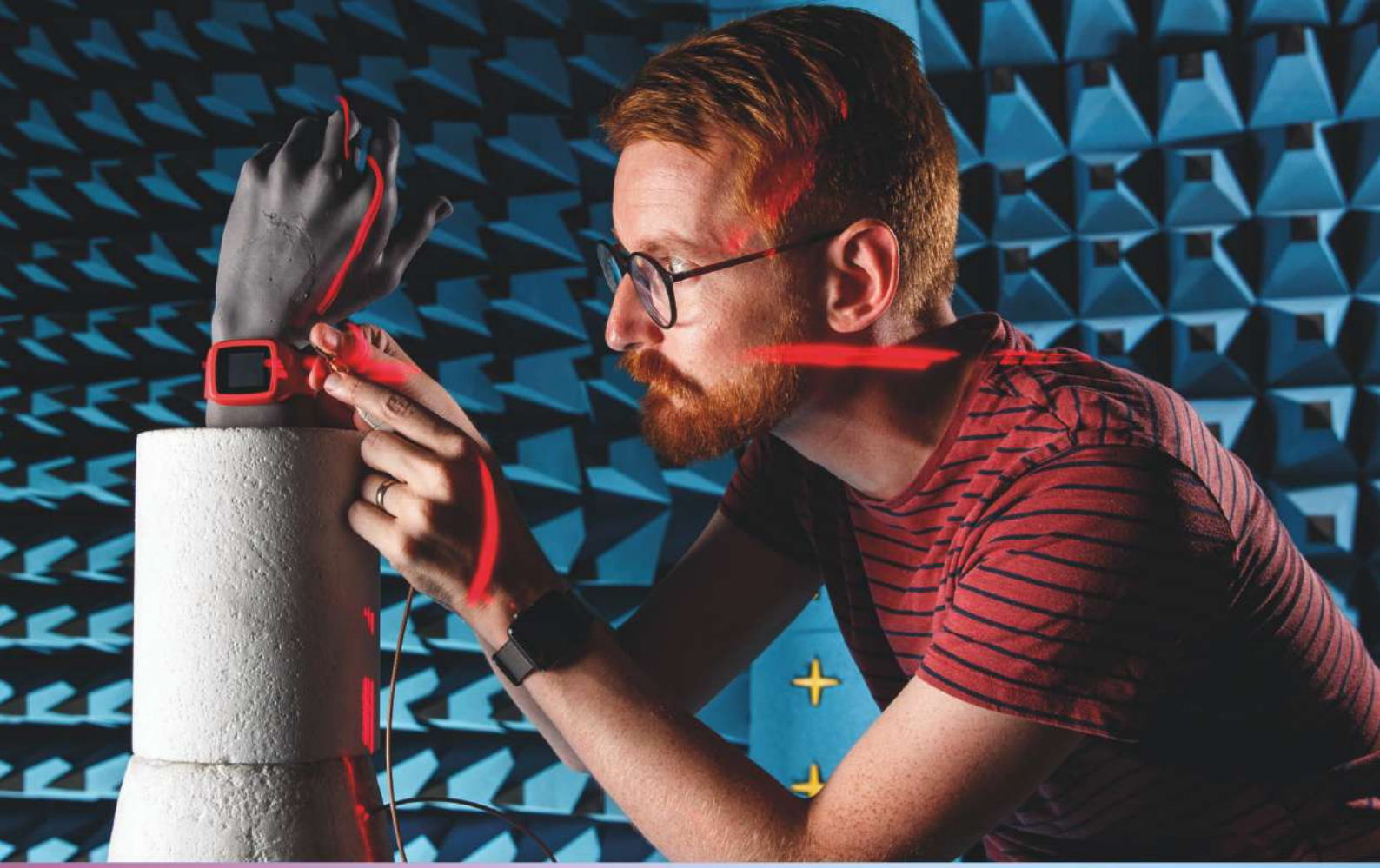
IST members are also based in Industry in companies such as the Nestle Ghana Company.

Africa is home to one of the IST Branches that still exists today and this is ran by IST member **Rosina Nyarko, MIScT**. Rosina actively manages technical staff within her organisation and promotes and supports the engagement of her technical staff to undertake further training through the IST Higher Diploma.

Before Covid-19, Rosina would also actively engage with IST by attending our Annual National Technical Conferences.



Whilst the majority of our members are based in the UK, we do have a significant and important range of overseas members. The map above shows the percentage distribution of members overseas.



CHANGE THE WORLD.

CHANGE YOUR WORLD.

IT TAKES

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INDUSTRIAL DESIGNERS
COMPUTER SCIENTISTS
MECHANICAL ENGINEERS
HUMAN FACTORS ENGINEERS
DSP ENGINEERS
ELECTRONICS ENGINEERS
MACHINE LEARNING ENGINEERS
USER EXPERIENCE DESIGNERS
PRODUCT DESIGNERS
CHEMISTS
AND PHYSICISTS

TO DO WHAT WE DO.
(AND A LOT MORE).

Cambridge Consultants

cambridgeconsultants.com/careers

Andrew Patrick *MIScT RSci*

Andy is a Member of the IST (MIScT) and Registered Scientist (RSci)

Andy and his late father Jim Patrick who first Inspired Andy to take up a career in Engineering

Andy Patrick is a Workshop Supervisor in the Department of Chemical and Biological Engineering at the University of Sheffield.

What do you do at your institution?

I am Team Leader and supervise three Mechanical Workshops in the Faculty of Engineering. We design and manufacture bespoke experimental equipment. I am not sure there is such a thing as a typical day anymore, I could be organising the cleaning during covid and the next minute helping design a high tech plasma generator or a system to feed CO2 to algae, Keeping people safe and proving we are keeping people safe is a big part of my daily routine now.

Why did you want to work as a Technician?

I have always been interested in building things and being a workshop technician allows me to do this and I get paid for it which isn't bad! It's really satisfying to see a piece of equipment you've designed being used by a student for their research and they gain a PhD from it.

What makes your role so vital at your institution?

I help bridge the gap between an idea or concept and actually doing the research and getting results. I provide advice on designs, manufacturing, safety drawn from many years of experience and a facility to manufacture the equipment. Basically I turn Ideas into reality, as do lots of technicians.

What did you do before you became a Technician?

I served a five-year apprenticeship in engineering. I stayed with the same firm for 10 years, once I had saved up enough money I set off round the world for a few years. When I came back I worked in a small engineering firm before starting at the university as a technician.

What do you enjoy doing when you are not working?

I am a keen cyclist and enjoy family bike rides, we also like to go camping, walking and especially enjoy a campfire in the evening. I am also still travelling the world but only for a few weeks at a time now.

CONGRATULATIONS

Kelly Vere, MBE FIScT

Well done to Kelly, our newly elected IST Fellow.

The IST also congratulated Kelly on behalf of the Executive and its members at the start of the year, for being awarded an MBE in the 2021 New Years Honours list, the prestigious award recognises her services to Higher Education.

Congratulations to **Margaret Ross, FIScT** for being included in the Computer Weekly "Hall of Fame" and nominated by Computer Weekly on the list of 'Most Influential Women in UK IT 2020.

Margaret was also one of the four finalists of the new BCS Society Medal. The winner of this medal was Elizabeth Denham, CBE.

In 2020, Margaret was chosen for the Southampton pop-up "Empathy Museum" to let people walk 'A mile in My Shoes'. Housed in a giant shoebox, this roaming exhibit holds a collection of shoes and audio stories that explore our shared stories that remains in this national travelling museum.

We are keeping a record of all awards and recognitions our members receive and in May 2021 we will bring these all together and showcase the Technical Community in:

THE AWARDS LIBRARY

COMING MAY 2021

Please let us know about any awards you receive or have received so we can publish them amongst our members and readership.

Have you or one of your colleagues received an award or recognition that you would like us to promote? Contact us at the Office.

office@istonline.org.uk

Congratulations to Steve Mung, FIScT CSci who has been elected to the College of Fellows by receiving a Diploma of Fellowship.

Salters' National Awards for Science Technicians

The **aim of the Awards** is to highlight the important role played by school and college **technician teams** in enabling high quality and effective practical work in science.

Click here to read more.

Terry's Walk All Over Cancer

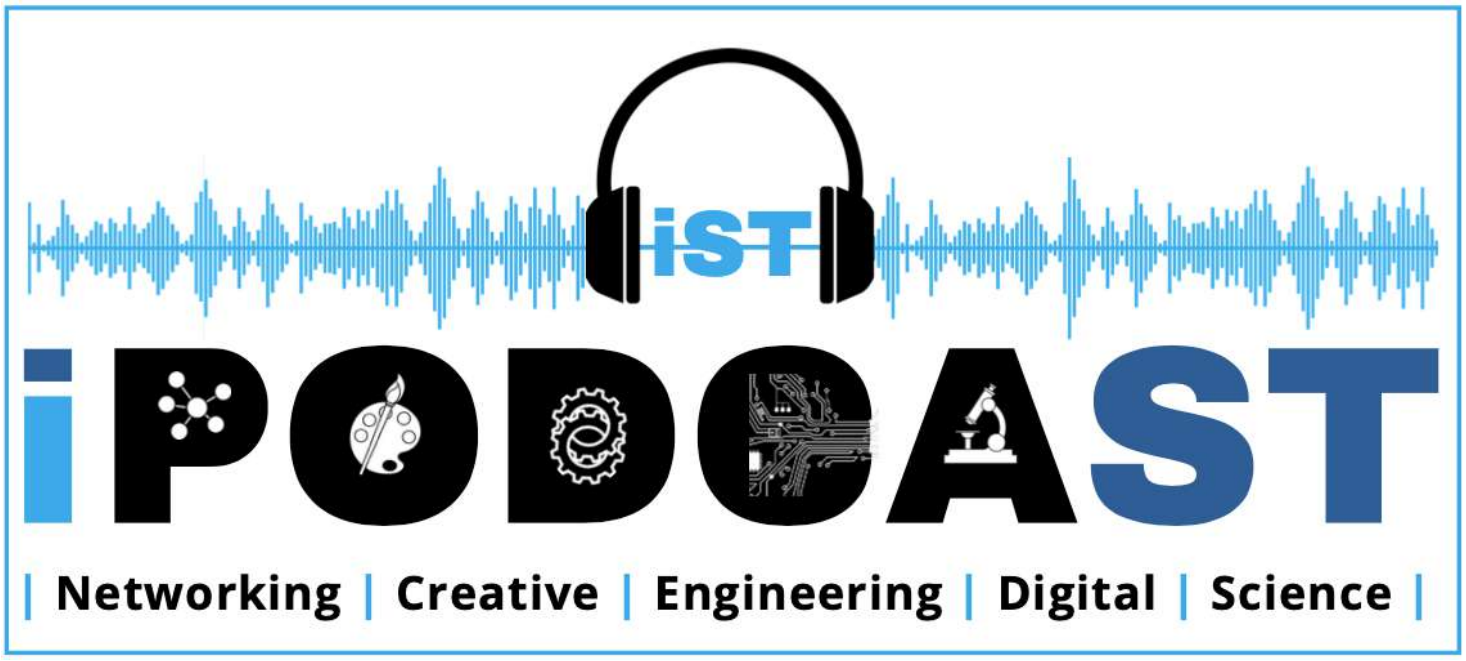
Terry Croft MBE, has undertaken the 10,000 steps challenge to raise funds for Cancer Research UK over March!

This is how we normally see our Chair and CEO carrying out his duties on behalf of the Institute.

The wind and the rain is no excuse to miss a day.

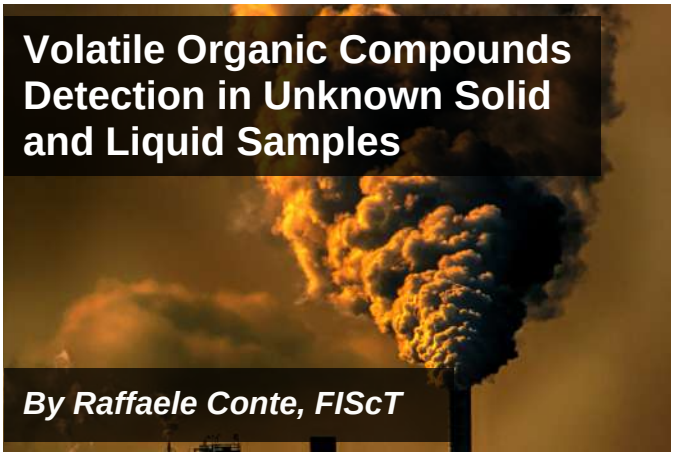
Terry Croft has been carrying out a great fundraising initiative over March 2021 and talks on the latest podcast about the reasons why Terry undertook the challenge, how cancer has had an impact on his friends and family, along with some advice as to how others can start their own challenges. You can listen to the podcast below, or you can read the blog on our website by clicking here.

We have put together our first IST Podcast, you can listen to it by clicking on the box below.

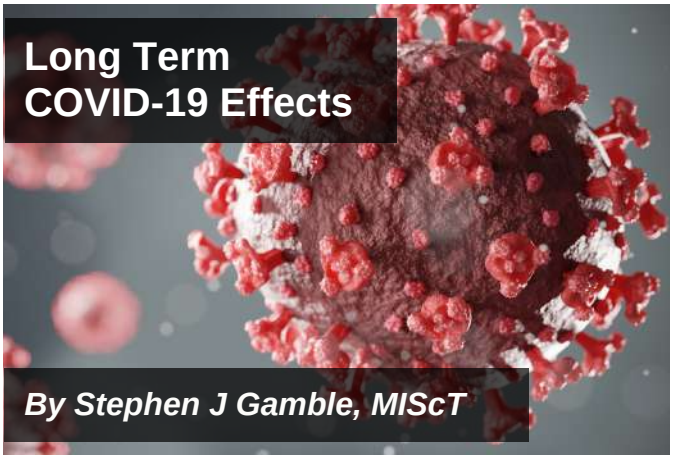


E-articles are generally longer than other magazine articles. Therefore, to maximise your time for reading, we have condensed our longer articles onto this page so you can chose what you read. **Click on any of the boxes below to read the article**.

(a) Soon after the Windscale nuclear accident in 1957 the steps taken to deal with this accident displayed considerable devotion to duty on the part of all concerned. But what was the cause of the accident?



(b) Many VOCs are human-made chemicals produced in the manufacture and utilization of paints, pharmaceuticals, and refrigerants. Developing a procedure for the analysis of VOCs in liquid/solid samples is of great interest.



(c) Following the acute phase of the covid-19 infection, a number of people exhibit post-infection symptoms that may last for a number of months. This paper looks at the roles and interactions of dopamine and mitochondria in disease, including how other factors might affect these.

The Institute supports the technical community and engages with anyone who has an interest in developing the technical workforce. We have several membership levels available.

RECOMMEND A NEW MEMBER TO HELP US GROW OUR MEMBERSHIP

Room Photography Tips

5 top tips to help you take great photographs.

What Are The Most Common Photography Errors?

The number one common error is not keeping the **camera straight!** The verticals should always remain vertical, and not be tilted up or down. Use a grid in the viewfinder to help shoot straight. If no feature is available, use a wall as a guide.

Lights can be a problem! Unless you have a software that can tone down lamps, if your lights are dimmable, use the lowest setting for more balanced results. Natural daylight is the best source of light for professionals.

What Should You Think About Before You Begin Taking Pictures?

In advance of your shoot, **planning** is essential, just as you do when designing. It is important to take the room's orientation into account and know where the light is coming from.

Weather conditions are important. Most people assume a bright sunny day is ideal, however the sun can create problems, giving a harsh light with overly strong shadows. Flat grey skies provide more balance.

How To Approach Rooms With Small and Large Dimensions

For **smaller rooms**, a wider lens may be necessary to see enough in the shot. But don't go to the extreme, as this will distort parts of the picture (especially the edge). An example of this is done in estate agents' photos to make the rooms appear bigger.

For **larger rooms**, use a tighter lens to make a room feel intimate. A wide lens on a large space may appear distant, unless you are showing the scale of the room.

What Else Is Important To Know For Rooms Of All Proportions?

Regardless of the room size, it is essential to **take more than one** photograph. Don't try to get everything in one shot. For decorative accessories or furniture, even though they may be positioned well in the room, you may get in the way. **Re-arrange** if necessary to get a good photo.

What Do You Need To Be Aware Of When You're Taking Photos For Instagram?

Instagram is a powerful social media tool but it is essential to **keep things simple**, punchy, graphic, immediate and memorable. If you are taking photos for Instagram of a flat surface, such as a table or shelf, you may need to move decorative pieces closer to the camera to get the best photo.

Lisa Ludlow

Lisa is an instructional video creator at Pentrehafod Secondary School

Amazon Go stores: using digital technology to bypass the cashier

Online retailer Amazon, has used the power of technology to automate customer experience, allowing individuals to purchase products with the absence of cashiers or self-checkout stations.

The concept of each of Amazon's futuristic stores relies on two factors; people must have smartphones (let's face it everyone does these days) and geofencing technology using an IP address or GPS; enabling a virtual perimeter which uses a location-aware device to track when you enter or exit the premises.

Geofencing technology is not a new concept, but fairly new for Amazon Go stores (conceptualised in 2015). Geofencing has been used with child location services, to notify parents if a child leaves a designated area. It is also used with firearms to restrict weapons to fire only in locations where the firing is permitted. Some companies even use geofencing in human resource departments to monitor employees working with special locations carrying out field work.

There are quite a few technologies in place within the Amazon Go stores. Computer vision is used to gain high-level understanding from digital images or videos. This computer vision involves acquiring data, processing, analysing, understanding digital images and extracting dimensional data from the 'real world'. Go stores also use deep learning algorithms, where there methods are based on artificial neural networks with representation learning. The last few steps in the Go stores involve purchasing, checkout and payment, which are handled by sensor fusion. Sensor fusion is used in the design of autonomous systems and combines two or more data sources in a way that generates a better understanding of the system. This better understanding refers to the solution becoming more consistent over time, more accurate and more dependable than a single data source.

Autonomous systems need to interact with the physical world around them. Sensors can be used to collect data and is used in self-drive cars, for example using radar, LIDAR and cameras. The system then interprets the data and converts it into something that can be understood by the autonomous system. Ultimately the system would then find the correct path using this key information and act on these calculations.

In effect, when you go to an Amazon Go store, you enter the building 'or area' and the sensors and cameras pick up every angle of the shop. Individuals walk around and pick up the products they desire. Algorithms calculate and determine through digital images and interpretation of data, what you have picked up and keeps track of this. Once you have everything you need, you walk out of the exit and your smartphone notifies you of what you have bought and spent. Simple!

This is a great idea in principle and has many pros such as cutting back on waiting times in queues, avoiding the need for cash and may help to prevent shoplifting. The cons however to the consumers may cause them to spend more than they need to, increasing impulse buying (this however is undoubtedly another pro for the producers).

John-Paul Ashton, MIScT

John-Paul is an Executive Support Officer and a Specialist Advisor with a keen interest in digital technology and digital design

Why interdisciplinary research in AI is so important, according to Jurassic Park.

“Your scientists were so preoccupied with whether or not they could, they didn’t stop to think if they should.”

“Your scientists were so preoccupied with whether or not they could, they didn’t stop to think if they should.”

I think this quote resonates with us now more than ever, especially in the world of technological development. The writers of Jurassic Park were years ahead of their time with this powerful quote.

As we build new technology, and we push on to see what can actually be achieved there is an undertone of sales to whatever we build. The end product must be sold somewhere and to someone. This can derail any good intentions; just as building a resort full of dinosaurs was sold as a fun attraction, we see later in the film that it became a resort of terror.

In the field of AI we are certainly late to the party with ethics and regulation. Indeed, even existing modelling protocols have been, in many cases, circumvented or potentially ignored. This has led to a widening of the gap in the interdisciplinary field of AI. This is compounded by pop culture representations of AI and the Ethicist’s potential lack of knowledge surrounding technical progression in the field of AI.

There are now seemingly two separate branches that ought to be in sync. The first branch is a group of philosophers led by the author of "Superintelligence", Nick Bostrom, who believe that there is a singularity where AI takes over the world and starts to kill off humans. The second branch is the Technical Cohort who are led by companies such as Google and Deepmind. The remit of these developers is to see what can be developed and produced. Ultimately a separate sales team will determine what products can be sold.

We have seen multiple failures of AI due to lack of interdisciplinary discourse. Some cases include misallocated or cut-off financial support and healthcare. This indicates the prevalence of issues that can grow and become ever more complex.

So, we have to ask ourselves two questions: One, do the philosophers have a point? Two, does that point refer to humans programming AI in such a way that the destruction of the human race is its optimal aim in order to create a better future world?

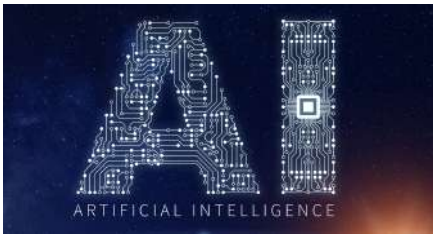
Is the development of AI that different to an island of genetically engineered dinosaurs?

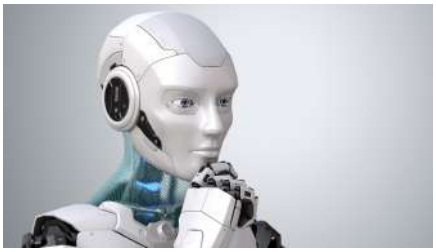
The only solution, in my view, is interdisciplinary discourse.

Marie Oldfield, MIScT

Marie is a member of the IST Executive, Director of Oldfield Consultancy and is currently a Doctoral candidate in Artificial Intelligence.

Interested in AI? Marie is looking for everyones opinion in the following survey CLICK HERE





Biomarkers reveal ancient environment & climate

Biological **marker**s or biomarkers are molecular fossils found in all kinds of geologic deposits, such as lake sediments, ocean floor sediments and peat bogs. They are molecules that were once part of living organisms. As organic geochemists, we use biomarkers as tools to reconstruct climate change. They can often be applied in both marine and terrestrial environments, making them useful proxies for reconstructing environmental change around the world. Each type of biomarker can reveal different information about the past environment, such as past temperature, past rainfall amount, or changes in plant communities. They can also help us understand the complex effects of organic metabolites and human-derived waste products such as combustion products that contaminate the atmosphere and lithosphere. The applications of biomarkers to geoscience are diverse so we collaborate with researchers in a number of fields to generate multiproxy climate records as well as working with bioscientists to understand how and why organisms produce biomarkers and how those biomarkers relate to modern environmental parameters.

Biomarkers can be traced to a particular biological origin. The most effective biomarkers are organic compounds with specific biological sources, whose structures can be preserved through geologic time. An example of such are alkenones.Alkenones are globally abundant hydrocarbon lipids produced by specific marine and lake algae known as haptophytes. Haptophytes produce large quantities of alkenones seasonally, not only in the oceans, but also in lakes. The production of alkenones is temperature dependant so the biomarker can be used for the reconstructing past water temperatures.

The relationship between water temperature and alkenones in the oceans is well understood and mainly one algal species produces them. However, the diversity of species in lakes complicates the relationship. One of our research group's aims is to understand alkenone production in lakes and how it is related to temperature.

From lakes in the Canadian Prairies to those in the Sierra Nevadas of Southern Spain to the remote lakes in Japan, we work on samples from around the world. This helps us not only study and understand the environments they are based in but having sites around the world help us understand past environments and climate change on a much bigger, global scale.

When sediment samples are brought to our organic geochemistry labs, we freeze dry the samples and then extract organic matter from the sediment using an Accelerated Solvent Extractor. The organic matter is then divided into different classes of compounds using column chromatography and these compounds are measured and analysed using gas chromatography and mass spectrometry.

Technicians play a vital role in the field of organic geochemistry. From carrying out or assisting in field work to maintaining analytical equipment and analysing samples, to creating new methods and overcoming different technical challenges that come naturally as a result of studying different sites and environments around the world, 'Technicians Make It Happen'!

Mohammad Ali Salik, MIScT

Mohammad is a Research Lab Manager and Technician Commitment Co-ordinator at the University of Glasgow.

Reflective Practice: On Diversity and Inclusion in

Quinn Jackson, FIScT

Quinn is a Chief Scientist (Mathematics) at Pattern Computer based in Vancouver, British Columbia, Canada.

Embracing a diversity and inclusion framework in science and technology not only promises to foster and enable better working environments for scientists and technicians, but also has great potential to improve and humanise scientific and technical practice and its outcomes, thereby improving the conditions of the society that science and technology serve. **[1]** Divorcing the humanistic view from the scientific view, however, is potentially a path beset with unintended consequences. Science and humanity can engage in a conversation, and diversity and inclusion can attend that caucus with the hope of avoiding such consequences in future.

In 1907, Sir Francis Galton published "Vox populi" in Nature, **[2]** and from the insights therein, statisticians are introduced to the notion of the "wisdom of the crowd." The methods used for estimation of livestock weight by Galton so long ago are akin to those found in certain ensemble learning techniques in Machine Learning today. Galton is also infamous, however, for another concept: eugenics – a term he coined and for which he was even commemorated. **[3]** Yet another technique still discussed in Machine Learning is Fisher's Linear Discriminant Analysis, first discussed in 1936 in the Annals of Eugenics, a journal which, though now renamed, includes the conspicuous disclosure that "[t]he work of eugenicists was often pervaded by prejudice against racial, ethnic and disabled groups." **[4]** Clearly Galton and Fisher lived in and participated in a society that systemically and fundamentally did not embrace diversity and inclusion. Uncovering the oppressive societal overtones and undercurrents of the past is more than just uncomfortable: the "scientific" imprimatur given to eugenics was used as a tool, to humankind's overall detriment. Scientists have a responsibility to examine their thinking, for it is thinking that is the primary tool of the manifestation of science as a human undertaking.

Before continuing, I disclose my bias as relates to this topic: I am autistic. I have always been autistic; it is part of my identity as a human being. I am neither high nor low "functioning" **[5]** – I do not embrace or identify with this stratifying, utilitarian view of neurodivergence. I am part of a larger system of human beings, and when I practice science, I am part of a larger system of scientists.

We all function as part of something larger than ourselves. We are, all of us, social beings. My ability to spot patterns that others may not spot in the same way is categorical rather than ordinal. My hyperlexia most likely contributed to how I see symbols and language and the sheer volume of reading and studying I could tackle, and this led to poetry, which led to set theory, which led to computational linguistics, which led to mathematics and bioinformatics and other branches of science **[6]**; but this is a circuitous journey that has involved far more than my being autistic - it has been part of a human journey, and we all have our own, each with our own set of strengths and challenges.

I have been an agent in each of those steps, and others, too, have contributed to this journey. I have been included in my diversity and have been fortunate enough to have a voice in that inclusion. Other autistics, however, have not been as fortunate, with the latest employment statistics in the UK showing that autistics have the lowest employment rates amongst the disabled **[7]**, with rates of employment amongst autistics in my own region, North America, being comparable. **[8]**

Given this context, consider what assault happens to my psyche when I read views such as those expressed by Ole Ivar Lovaas, a founder of an entire movement of treatment in autistic children: "You have a person in the physical sense – they have hair, a nose and a mouth – but [autistic children] are not people in the psychological sense." **[9]**

That is the shape of science without diversity and inclusion.

Some might point out that those words were uttered in the past context of 1974, that progress has been made since then, but as it stands, autistic adults who have been subjected to Applied Behaviour Analysis (ABA) during their childhoods have come out to this day to say that it is harmful. **[10] [11]** They are indeed "people in the psychological sense" and a number of these people have made their voice clear on this. Where would we be now collectively had diversity and inclusion been an utmost priority in the systems, culture, and practices of the days of Galton, Fisher, and Lovaas? How might have harm been reduced?

Science and Technology

We cannot fully undo the damage done by the socioeconomic, ableist, and other biases of the past. We can, however, search ourselves and our conceptions of the world and its many agents so that we do not knowingly perpetuate or contribute to it. We can put in its stead something synthesised by teams of the diverse and included but previously unheard contributors with deeper, more representative perspectives.

We are already taking strides in this positive direction **[12] [13] [14]**. What better way to move forward holistically than to be surrounded by, and to be held accountable by, those with whom we seek to advance the platform of human wellness and society in general? The very first tenet of the Code of Professional Conduct of the Institute of Science & Technology gives an ideal toward which to strive:

1.0 *Owe a primary loyalty to their employers, colleagues, the community they serve and the environment they affect. Their work activities should be performed according to the highest professional standards and ethical principles, maintaining respect for people and living organisms. They should also ensure the objectivity and reliability of any professional advice given.* ***[15]***

Other professional societies' codes reflect these same underpinnings. In the Association for Computing Machinery, the first two tenets of their Code are:

1.1 *Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.*

1.2 *Avoid harm.* ***[16]***

Diversity and inclusion amongst our fold is a key and critical part of upholding and fostering these ideals in real and consequential ways in the systems in which we participate and to which we would strive to contribute. It is something we can model, encourage, and practice this very moment, rather than in some misty better future. We can reach out, now, and encourage scientists and technicians from whatever their identity to join us, and by including them, increase the likelihood of using our science and technology to better the human condition overall.

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WorkFit: Connecting employers and employees with Down's Syndrome

WorkFit is the Down's Syndrome Association's employment programme which brings together employers and job-seekers who have Down's syndrome. It is a tailored service dedicated to training employers about the learning profile of people who have Down's syndrome so that they can be supported in the workplace. We focus on finding the right employment opportunities for people who have Down's syndrome and ensuring that they have the support they need to be successful in the workplace.

IST have been involved with developing a Level 1 training course in collaboration with WorkFit and the Environment Agency and it is great to hear from IST Advisor, James Trout, that there are currently three lab assistants still working within the Environment Agency (two of which have nearly finished all the work necessary for certification). Which is really encouraging and fantastic news.

We will be featuring the WorkFit technicians in one of our future publications, so keep an eye out.

Down's Syndrome Association WORKFIT

THE MILLENNIUM SEED BANK PROJECT

The Millennium Seed Bank (MSB) is the world's largest underground seed bank and conservation resource for diverse wild plant species. Hidden underground in rural Sussex is the world's largest collection of seeds from wild plants.

The MSB is home to over 2.3 billion seeds, representing over 39,000 different species of the world's storable seeds. This is the most diverse wild plant species genetic resource on Earth – a global insurance policy to store and conserve seeds from common, rare or endangered useful plants.

Not only is the MSB a world-class automated state-of-the-art research facility, the MSB is flood, bomb and radiation proof. Deep freeze chambers store seeds at -20°C, using international standards.

There are fully kitted laboratories and seed preparation facilities on-site for botanists and geneticists to germinate and study seeds.

The MSB is part of the Wellcome Trust Millennium building; an energy-efficient location with cold and dry rooms powered by solar panels.

In 2002, the MSB was visited by the IST Sussex Downland Branch which was led by the late Branch Chair John Burns.

Seed processing

Seed collections arrive at the MSB where they

are taken to an initial drying room, kept at 15°C with a 15% relative humidity.

Every 1% the MSB reduce a seed's moisture content doubles its life span. The initial drying phase increases a seed's life 40x over. This can take between two weeks and six months.

Seeds are cleaned by hand or using an aspirator before using X-ray analysis to identify damaged or empty seeds that can be discarded.

Seeds are placed in a drying room, operating at 18°C/15% relative humidity to ensure seeds are dry enough to withstand freezing.

After which, they are placed in labelled jars and stored in our sub-zero chambers. These collections are curated to international gene-bank standards.

Credit: Kew Gardens Seed Bank

GETTING "MORE BANG FOR YOUR BUCK"

It's important to invest enthusiasm and passion into personal development (PD). However, these investments alone will not automatically deliver PD which exerts maximum leverage on career and professional development. Getting "more bang for your buck" i.e. optimising the benefits to career and professional development also requires preparation, management and ongoing maintenance of a personal development plan (PDP).

Preparation of a PDP begins with a personal vision followed by setting goals to transform that vision into reality. It's necessary to make a space and a time for reflection, to consider what's important i.e. personal needs (survival) & wants (desires) and prioritise them before moving on to address the questions:

Where am I now? **|** Where do I want or need to be? **|** How will I get there?

Useful Links

Science Council

University of Sheffield

IOSH

Civil Service

Further efforts in putting together objectives (or milestones) leading to the achievement of set goals should be selective, detailed and focused. Good focus can be achieved by "zooming in on the plan's detail and zooming out to see the plan's big picture" during its development. A well-considered plan may simultaneously deliver objectives and goals for an Annual Performance Review (APR). Achieving these will require consideration of an organisation's priorities as well as an individual's and possibly the creation of a business plan in order to secure the organisation's backing.

Considering the 5 key stages, outlined below, should help with producing a balanced and effective PDP, and promote its successful execution.

Key Stages in PDP:

1. The Vision - S.P.A.C.E Goals:

Consider the background and context to attaining the vision. Construct personal goals using the S.P.A.C.E method. **S**pecific = consider needs and wants as well as the time frame for their delivery. **P**ositive = promotes looking towards the future. **A**ctioned personally = changing personal behaviour, which could help influence others. **C**hallenging = revaluate the goal if it's too simple or unachievable. **E**vidence = demonstrate accomplishment, e.g. gain a qualification.

2. Self-assessment*:

· *Where am I now?*
Audit current levels (e.g. using a scale of 1 – 5) of competency (skills, knowledge, behaviours and experience) for competencies which are relevant to personal career and professional development aspirations. Research what additional competencies could be relevant. Assess self-awareness and establish an understanding of personal learning style(s). Also, consider employment, education and personal interests (possibly all recorded together on a CV).

· *Where do I want or need to be?*
Review current levels for each competency and determine what level should be attained in order to achieve personal goals; decide if any attention is needed to be given to other assessed factors.

3. Construct a Personal Development Plan:

· *How will I get there?*
Create a plan that focuses on the next step instead of an end goal. Setting objectives which are SMART (**S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime bound.) will help in achieving goals. Develop the specifics of the objectives and how to achieve them by harnessing the resources: information; learning activities; personal (current competencies, time, networks); material (equipment, finance) needed to complete them.

4. Action:

Ensure the PDP is acted upon. All of the goal setting, self-assessment and planning in the world is worth nothing if nothing is actioned.

5. Evaluation & Review:

Compare progress against the PDP; is it on track or does the 'track' need adjusting? Are objectives realistic still relevant? Don't hesitate to adapt or fine-tune the plan. Failure to evaluate and review a PDP on a regular basis, raises the risk of becoming complacent, of dropping off the learning curve, of accumulating many years of repetitive experience and of, most importantly, failing to get "more bang for your buck.

Arthur Nicholas, FIScT
IST Education Officer

"PDP begins with a personal vision followed by setting goals"

**There are numerous competency forms/frameworks for recording and guiding self-assessment and progression of competency. Some examples can be found in useful resources.*

1-2-1 Mentoring

NTDC Smart Mentoring

Mentor SMart Club

HEaTED Coaching Service

What is mentoring?

RESOURCES

Science Council Resources

Useful resources for members, registrants, applicants and support for scientists and apprentices

Diversity and Inclusion Progression Framework - Benchmarking Report 2017

Education Resources

T-Levels - Technicians Make it Happen

T-Level Resources for Teachers - Amazing Apprenticeships

Introduction of T-Levels - GOV.UK

Apprenticeships - Technicians Make it Happen

Sector Specific Resources

Creative Resources - Creative Industries Federation

Digital Resources - Digital Strategy

Engineering Resources - Royal Academy of Engineering

Science Resources - Science and Public Policy

Diversity and Inclusion Resources

The Institute of Equality and Diversity Practitioners

Chartered Institute of Personnel and Development (CIPD)

Sustainability Resources

Climate, Justice and Science - Grist

TRAINING

IST's Leading Your Technical Team

IST's Higher Diploma

Validation and Certification (IST)

IST's Professional and Personal Development

Higher Education

The Open University Courses

AdvanceHE

HEaTED Technician Courses

Schools and Colleges

STEM Learning

Professional Registers

RSciTech - Registered Science Technician

RSci - Registered Scientist

CSci - Chartered Scientist

Registered Practitioners

Events - Click on the blocks to visit the websites

TMU Virtual Conference 2021

14th April 2021

Leeds Digital Festival

27th - 29th April 2021

Learning Technologies (ExCel)

9th - 10th June 2021

Higher Education Technician Summit (Lite)

23rd June 2021

UKSPA Med Tech Innovation

29th - 30th June 2021

The Annual IST Technical Conference

15th September 2021

Momentum

2nd - 3rd November 2021

Lab Innovations

3rd - 4th November 2021

Higher Education Technician Summit

10th November 2021

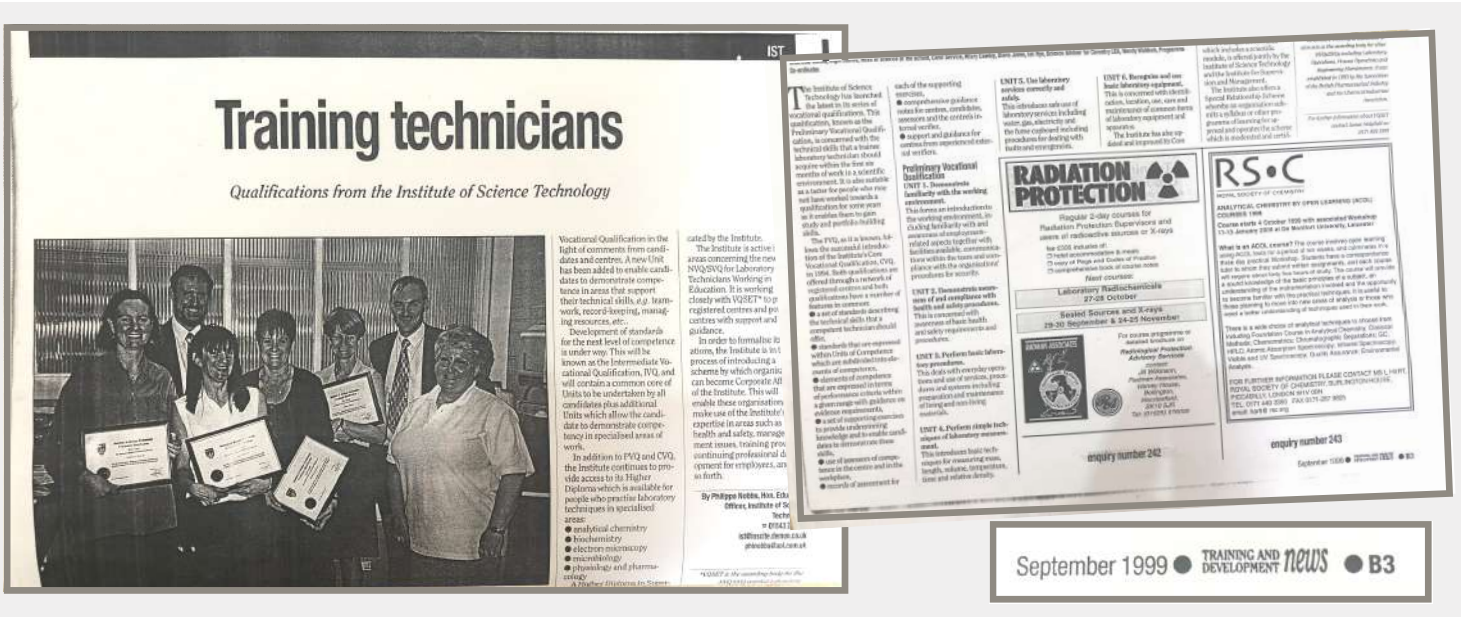
TechWorks Industry Summit

18th November 2021

IST partners HEaTED offer a wide variety of CPD Courses, bespoke to the technical community.

Over the last year HEaTED have delivered 5-star rated courses and have listened to participants feedback which has informed a brand new selection of courses.

Commencing with...



#04 Training Technicians

Qualifications from the Institute of Science Technology

In 1999, IST launched the latest in its series of vocational qualifications. This qualification, was known as the Preliminary Vocational Qualification (PVQ) and was concerned with the technical skills that a trainee laboratory technician should acquire within the first six months of work in a laboratory environment.

The PVQ was followed by the successful introduction of the Institute's Core Vocational Qualification (CVQ) in 1994.

Both qualifications had common features:

- a set of standards describing the technical skills that a competent technician should offer,
- standards that are expressed with Units of Competence,
- a set of supporting exercises to provide underpinning knowledge and to enable candidates to demonstrate these skills,
- use of assessors of competence in the centre and in the workplace,
- records of assessment for each of the supporting exercises,
- comprehensive guidance notes for centre, candidates, assessors and the centre's internal verifier,
- support and guidance for centres from experienced external verifiers.

Our former Education Officer, Philippa Nobbs, was involved in the development of the qualification and aligning its six units, including being able to demonstrate familiarity with the working environment and demonstrating awareness of and compliance with health and safety procedures.

In addition to PVQ and CVQ, the Institute has provided access to its Higher Diploma which has been available for people who practice laboratory techniques in specialised areas, such as analytical chemistry, biochemistry and microbiology. These courses are still available from the IST today.

The Institute also offered a Special Relationship Scheme whereby an organisation could submit a syllabus or other programme of learning for approval and would operate the scheme which is moderated and certificated by the Institute. This is something that the IST are still involved with and always look forward to working with new organisations.

The Institute has been continuing to support the training in the technical community and will continue to do so from 2021 onwards. Qualifications change throughout the years and we are adapting the best we can to support the community based on what technicians want. When the IST officially commenced the work around 20 years ago for HEaTED, after receiving funding from the Leadership Foundation led by Matt Levi, John Robinson and Bob Hardwick, we could not envisage back then how well it would be doing now.

We hope to continue to work with our partners to bring the technical community, the training they need for the future.

Get Involved

We are still accepting expressions of interest to be part of the Editorial Board or to be involved with any of the other IST activities that take place over the year.

Thank You for your contributions

Raffaele Conte **MIScT**
Samuel Evetts **MIScT**
Stephen J Gamble **MIScT**
Quinn Jackson **FIScT**
Lisa Ludlow **BA**
Andrew Patrick **MIScT**
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Congratulations to

Kelly Vere **MBE FIScT,** Margaret Ross **FIScT** and Steve Mung **FIScT.**

Wanting to contribute to the magazine?

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