



Supporting technical staff working in science, technology, engineering, digital, arts and media

# IST Conference 2019 Programme

**Birmingham Conference and Events Centre  
Wednesday 18th September**

**#ISTconf2019 #istonline**



# PROGRAMME

CONFERENCE CHAIR &  
KEYNOTE SPEAKERS



**Dr Helen Sharman CMG  
OBE FRSC FIScT**



**Prof. Alberto Vecchio**  
Professor of Astrophysics



Read on to discover more...

09:30-10:00	Registration
10:00-10:15	Welcome and opening remarks
10:15-10:45	Keynote 1 - Mercian Theatre How to Discover Black Holes with a (Pretty Damn Good) Ruler
10:50-11:35	<b>SESSION ONE WORKSHOPS</b> Workshop 1 - Discover Workshop 2 - Rookeries 2 Workshop 3 - Imagine Workshop 4 - Rookeries 1 Workshop 5 - Mercian Theatre
11:35-12:05	Refreshment break and time to visit the exhibitions and view the posters
12:05-12:50	<b>SESSION TWO WORKSHOPS</b> Workshop 6 - Rookeries 1 Workshop 7 - Rookeries 2 Workshop 8 - Mercian Theatre Workshop 9 - Imagine Workshop 10 - Discover
13:00-14:15	Lunch break and time to visit the exhibitions and view the posters
14:15-14:45	Keynote 2 - Mercian Theatre President's Workshop Technical Lessons from Astronaut Training
14:50-15:35	<b>SESSION THREE WORKSHOPS</b> Workshop 11 - Rookeries 2 Workshop 12 - Imagine Workshop 13 - Discover Workshop 14 - Mercian Theatre Workshop 15 - Rookeries 1
15:35-16:05	Refreshment break and time to visit the exhibitions and view the posters
16:05-16:20	Announcement and presentation of the Trainee/Apprentice Award and the Roger Dainty Best Poster Prize
16:20 - 16:30	Close of day



St Philip's Cathedral



Birmingham Museum & Art Gallery



### Dr Helen Sharman: President's Workshop

#### *Technical Lessons from Astronaut Training*

A talk about how astronauts train, with the formal and informal lessons that develop new recruits into successful team players, communicators and collaborators.

These 'space technicians' are recognised world-wide for their knowledge and practical skills. How can other technicians develop similar skills and achieve the recognition they deserve?



### Professor Alberto Vecchio: Keynote Speaker

#### *Keynote Title: How to Discover Black Holes with a (Pretty Damn Good) Ruler*

In the early seventies scientists started to consider building laser interferometers that could achieve differential length measurements of the order of a thousandth of the size of a proton over a baseline of a few kilometres. This rather preposterous undertaking was driven by the attempt to test a fundamental prediction of Einstein's theory of general relativity: gravitational waves. After a few decades of work by more than a thousand scientists, engineers and technicians, the Laser Interferometer Gravitational wave Observatory (LIGO) started to operate in its "advanced" configuration in September 2015. A few days later, LIGO detected for the first time ever gravitational waves. This first detection turned out to be much more than the completion of a century long quest for the experimental validation of a key prediction of Einstein's theory: it was the birth of gravitational wave astronomy and the beginning of radically new explorations of some of the most violent phenomena in the cosmos. To date we have discovered ten binary black hole mergers. We have observed for the first time the collision of a pair of neutron stars that has set in motion a sequence of remarkable events tracked by astronomers across the electro-magnetic spectrum.

This is just the beginning of a new journey to unveil some of the best kept secrets of the Universe which is likely to provide many more surprises in the years to come.

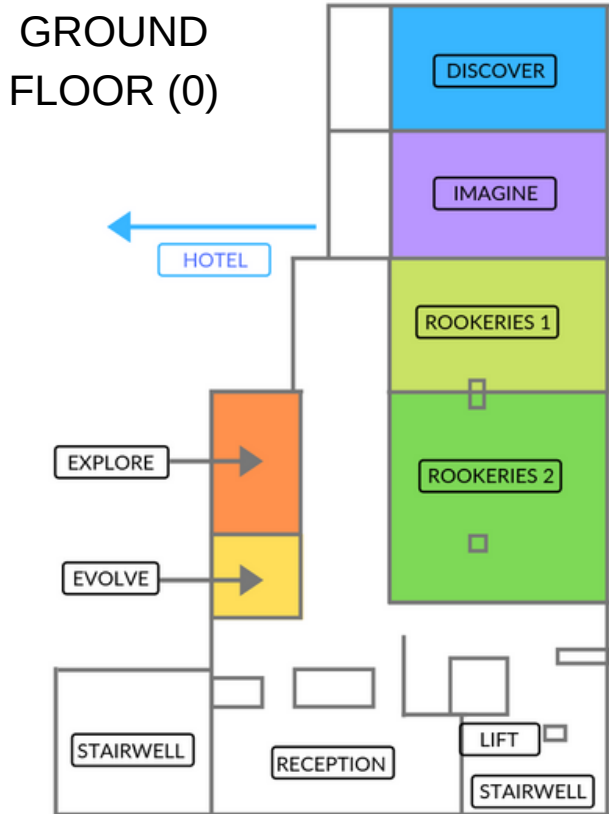
### 2019 Key Sponsors



### 2019 Exhibitors



UNIVERSITY OF BIRMINGHAM



**Discover & Imagine Rooms**  
Theatre Style (70 people max)



**Rookeries 1 and 2 Rooms**  
Cabaret Style (50 people max)



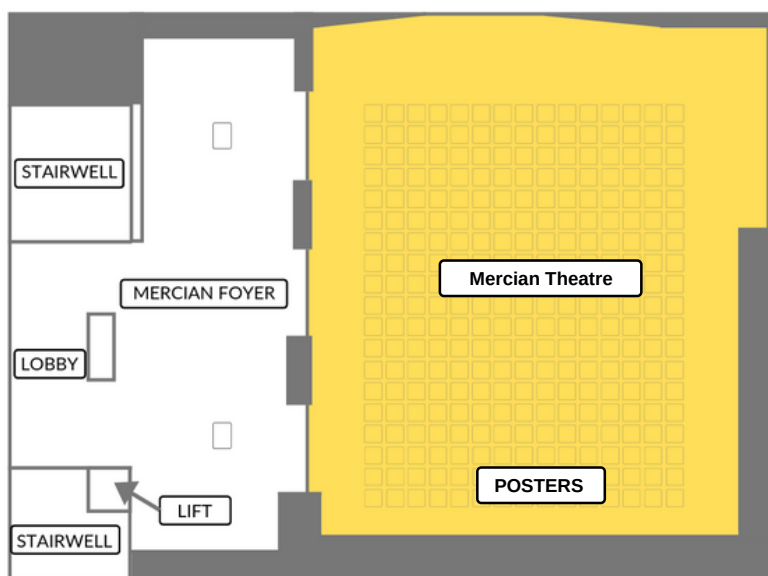
**Explore Room - Meeting room**  
Table and Chairs (10 people max)

**Evolve Room - Storage and Private Conference Team Room**

## SECOND FLOOR (2)

**Mercian Theatre**  
Theatre Style (300 people max)

**Mercian Foyer**  
Sponsor / Exhibitor Stands  
Refreshments & Catering



## Symbols Legend

Alignment of each specialist topic is denoted by the symbols below.



Creative Technologies



Professional Development



Science & Engineering



Supporting Individuals /  
Inclusivity



Technology (all areas)



Health and Safety

## Workshop 1 (Discover)

### The Molecular Biology Workflow

Peter Rignall

Eppendorf



The Molecular biology workflow, including one of the most important molecular biology methods, polymerase chain reaction (PCR). It is used to exponentially amplify a specific segment of DNA for various downstream applications like DNA cloning (genetic engineering), gene expression analysis (RT-PCR, RT-qPCR), genetic fingerprinting (paternity testing, forensics), sequencing (Next generation sequencing) and many more. We will discuss current workflow steps including, sample purification, quantification, preparation, amplification and subsequent storage of samples.

## Workshop 2 (Rookeries 2)

### Hydrogen Fuelled Trains

Stuart Hillmansen

University of Birmingham



The mainline testing of HydroFLEX marks an important step in the development of a zero-carbon emission propulsion system that could help to decarbonise Britain's railway. The HydroFLEX pilot involves the fitment of a hydrogen powerpack to an existing Class 319 train, which would eventually allow it to run on conventional electrified routes as well as independently.

In this workshop we will talk about how this technology is adopted into the mainline system to deliver emission-free public transport.

## Workshop 3 (Imagine)

### Man Met's Technical Services Apprenticeship Programme

Natalie Kennerley

Manchester Metropolitan University



Come and hear why we engaged with Apprenticeships and designed a programme to meet our needs. How this is supporting us in our sustainability of technical staff; addressing our skills gaps now and for the future.

Manchester Metropolitan University's Technical Services is proud to showcase their Level 3 and Level 6 apprenticeship programmes. Their Level 6 programme is currently available to all staff within Manchester Met who meet the qualifying criteria.

"We are going places."

## Workshop 4 (Rookeries 1)

### Photography in 2019

Glynis Johnston & Gemma McKay

Manchester Metropolitan University



What methods of creating an image are popular in 2019?

Has social media and the need for immediate images influenced the way in which we create a photograph?

Come along to hear from Glynis and Gemma as they talk about modern photography.

## Workshop 5 (Mercian Theatre)

### A journey to ensure recognition for technical staff at Newcastle University

Mel Leitch & Calum Kirk

National Technician Development Centre



Like many, Newcastle University is currently on a journey to ensure recognition for its technical staff. Mel Leitch and Calum Kirk from Newcastle University will talk about the tools they have used to ensure their technical staff receive the recognition they deserve.

They will discuss how Newcastle have used professional registration, technical networking, the Technician Commitment and the National Technician Development Centre tools and crucially, how they have based strategies around technicians own ideas and suggestions. They will also lead an interactive discussion on the impacts technicians can have on an organisation.

## Workshop 6 (Rookeries 1)

### Demonstration of Mobile Eye-Tracking

Paul Aldcroft

Manchester Metropolitan University



Come and get a demonstration of how we enhance user experience and streamline the design of mobile apps, company websites, video games and digital media marketing campaigns at Usability Labs.

A Head Mounted Eye tracking system (SMI) using lightweight glasses can be used to record user interaction with smartphones, tablets or any other technology based system. The system allows completely free movement and can be used to track interactions as a user moves through a building.

## Workshop 7 (Rookeries 2)

### How can we improve Equality, Diversity and Inclusion for Technical Staff?

Denise McLean & Tamsin Majerus

University of Nottingham



This workshop will consider some of the areas where we have identified a need for improvement in opportunities for career development for staff in Technical roles.

We will encourage participants to identify their own areas of challenge and brainstorm possible solutions.

Finally we will consider how local, regional and national communities can share and enhance best practice.

## Workshop 8 (Mercian Theatre)

### Sharing Best Practice for Risk Assessments

Pamela Lithgow

Canterbury Christ Church University



This workshop will look at a number of different health and safety documents, including risk assessments, for a number of situations and from a number of institutions.

A discussion will follow on how these events are handled in each institution and the respective merits of each approach.

## Workshop 9 (Imagine)

### Technician Commitment: Impact and Progress

Jane Banks

Science Council



The Science Council have been working with partners all over the UK to carry out the Technician Commitment Initiative and this has been going from strength to strength.

In this workshop, Jane will be talking about how the Science Council can support organisations and individuals with their Technician Commitment pledges and will also talk about professional registration.

## Workshop 10 (Discover)

### pH Measurement in Theory and Practice

Scott Marsden

Mettler Toledo



How to get the best from your pH measurement equipment.

This workshop is based on the measurement of pH and conductivity, with an emphasis on pH. There will be a detailed theoretical analysis of pH and a brief theoretical analysis of conductivity. This workshop will also look at the correct choice of instruments and electrodes in relation to specific applications, as well as the importance of calibration and care of electrodes.

Workshop 11 (Rookeries 2)

## Acid Digestion through to Solvent Extraction: Versatility is key

Vincent Cordon

CEM



The Mars 6 is one of the most versatile sample preparation units on the market and can be used for:

- Acid digestion – prior to trace metal analysis
- Fatty Acid Methyl Ester Sample Preparation
- Solvent extraction
- Hydrolysis
- Chemical synthesis

Find out more during this interactive workshop plus see our new rapid solvent extraction instrument – the Edge.

Workshop 12 (Imagine)

## Influencing Strategy in Government

Marie Oldfield

Oldfield  
Consultancy



Do you often wonder how to influence the big picture or get your work noticed in Government? This workshop looks at the impact of our work as scientists. We look at how we can be more visible as contributors and influence strategy with our output. We look at facilitation as well as structure of deliverables to achieve this.

This workshop will also talk about how to get your work noticed and information on evidence based decision making. The workshop will have examples on NATO, the Home Office EU Exit and Staff Courses.

Workshop 13 (Discover)

## Celebrating Technical Staff in the Creative Industries

Natalie Kennerley

Manchester  
Metropolitan  
University



Celebrating Technical Staff in the Creative Industries - creating a bespoke professional registration for arts and media technicians.

For a long time arts/creative industries technical staff have felt alienated from applying for professional registration due to a perception of this being a more science based register. This workshop will highlight the progress nationally to address this issue which will ultimately lead to the creation of a bespoke registration specifically for this sector, giving arts and media technicians the recognition they deserve.

Workshop 14 (Mercian Theatre)

## 'Herding Cats' – Reflections on Leading Technical Teams

Kate Dixon

Manchester  
Metropolitan  
University



Hear from Manchester Met's Head of Technical Services as she reflects on her 15 years of experience leading and working with technical teams.

Kate joined Manchester Met as Head of Technical Services in September 2017 and has embarked on a programme of transformative change initiatives.

Workshop 15 (Rookeries 1)

## Zine Making with Team Trident Press

Lisa Lorenz

Trident Press



This mindful per-zine making session invites you to ponder on your profession and to create your own little publication. Learn a new skill, reflect, and share your experiences with your colleagues. During the workshop you will make your personal one-page beak book that you can then fill with thoughts, memories and plans on being a technician. What did you want to be when you were a kid? What brought you here? Who inspired you? And where do you want to go next?

Lisa has been a member of Team Print at the Manchester School of Art as book binding technician since 2016.



There will be an IST professional registration desk open all day, with IST staff and volunteers available to help you with your application or provide advice, should you need it, please drop in.

Because there is a limit on the size of some of the technical talks / workshops we will ask you to choose your 3 talks / workshops (one from each session) before you attend on the day, full delegate details will be sent before the event to all delegates. Please reply promptly to secure a place on a workshop. We cannot guarantee a place will be available on the day without pre-booking.

For professionally registered delegates (RSciTech, RSci, CSci), and also those delegates considering applying for professional registration, the conference and its workshops will contribute significantly to your professional and personal development (PPD). The programme includes 2 highly motivational talks from keynote speakers, plus 3 technical workshops (chosen from the 15 available) throughout the day.

The conference also provides opportunities to participate through poster presentations, networking and supplier / manufacturer stands. All these will add considerably to your personal development, annual PPD score, and enhance your CV.

All delegates who attend the conference for the full day will receive a CPD certificate following the day.

## CPD and Awards

The Institute of Science and Technology (IST) proudly works with many partners to ensure that there are plenty of CPD opportunities for technical staff and specialists. Attendance at the conference contributes to your annual CPD as well as upskilling in the workshops, networking and also facilitating in discussions in the workshop sessions.

We will be holding several awards and prizes over the Conference which we are actively encouraging individuals to take part in or nominate individuals.

## 2019 Key Sponsors

