

**Inquiry-based Science Education:  
rhetoric and reality?**

Dr Rob Toplis, Brunel University &  
UCL

This talk will be of assistance to us as we assess the proposed new Leaving Certificate Biology, Chemistry and Physics specifications. In addition to giving us a good overview of IBSE, it will review constraints and concerns around the areas of resourcing, time, learning science, teachers' roles, guidance and what students actually do when engaging with inquiry in the science classroom.

(09.45 – 10.30)

**How should we support and  
assess practical work in  
secondary school science?**

Dr John Carroll, Nottingham Trent  
University

This talk will be of particular help to us in Ireland as we attempt to give marks for practical work carried out in the Individual Investigative Study of the proposed new Leaving Cert. Physics, Chemistry and Biology specifications.

(11.00 – 11.45)

**Friday 8<sup>th</sup> April 2022**

Venue: – The Kingsley Hotel, Western Road, Cork

- 18.00 – 19.30 **Registration**  
18.30 – 19.30 Welcome reception and refreshments (Tea /coffee and biscuits)  
19.30 – 20.00 **Official opening**  
20.05 – 20.30 **Finding your climate superpower – leading and inspiring for change**  
*Dr. Tara Shine, Change by Degrees*  
20.30 – 21.00 **SEAI Expert Panel discussion: Climate Leadership in Schools**  
21.00 – 00.00 **Buffet Supper**

**Saturday 9<sup>th</sup> April 2022**

Venue: UCC Western Gateway Building, Western Road, Cork  
from 08.30 **Registration**

- 09.00 – 09.45 **Concurrent Sessions**  
**Precision medicines: Treating disease in the 21st century**  
*Prof Jim O' Mahony, MTU*  
**Every breath we take: air quality in Ireland**  
*Prof John Wenger, UCC*  
**Sounds Just Right - the physics of sound and advanced scientific instrumentation used in acoustic measurements**  
*Dr Catherine Frehill, MTU*  
09.45 – 10.30 **Concurrent Sessions**  
**Inquiry-based Science Education: rhetoric and reality**  
*Dr Rob Toplis, Brunel University London and UCL Institute of Education, University of London*  
**Reflections on the current Leaving Certificate Biology syllabus from a Third-Level Perspective**  
*Professor Tommie McCarthy, School of Biochemistry and Cell Biology, UCC*  
**Electrical vehicles and secondary school science**  
*Dr John Hayes, Department of Electrical and Electronic Engineering, UCC*  
10.30 – 11.00 **Tea/Coffee in the Exhibition Area**  
11.00 – 11.45 **How should we support and assess practical work in secondary school science?**  
*Dr John Carroll, Nottingham Trent University, England*  
11.45 – 12.30 **The design, teaching and assessment of OCR GCSE Gateway Science Biology, Chemistry and Physics specifications**  
*Bethan Foulkes, OCR\* Awarding Body (Examination Board)*  
\*Oxford Cambridge and RSA  
12.30 – 13.15 **Lunch and Exhibitions (Collect lunch from G23)**

- 13.15 – 13.45 **SFI and ESERO Ireland and ESA resources to support STEM teaching and learning**  
*Stephanie O'Neill Science Foundation Ireland*  
13.45 – 14.45 **Drop-in workshops:**  
**SFI Workshop: Developing a research question in Senior Cycle science**  
*Chris Davies, STEM Advisor, PDST*  
**Exploring Electronics: A Transition Year Module**  
*Dr Eamon Connolly, Cork Electronics Industries Association*  
**Science on Stage, Project Ideas from the 2022 Festival**  
*Science on Stage Ireland Team*  
**Starting to use phyphox – the lab in your pocket**  
*Paul Nugent and David Keenahan*  
**Computational Thinking through games**  
*Tony McGennis, Advisor, PDST Leaving Cert Computer Science*  
**Data-logging wireless sensor technology experiments**  
*Dr Ian O'Connor UCC*  
**Take Charge Global Experiment 2022**  
*Dr John O'Donoghue, RSC*  
**Biophotonics Course for TY: Developing Multidisciplinary Courses through teacher –researcher collaboration**  
*Dr Marcelo Saito Nogueira, Tyndall National Institute, UCC*  
**Staying relevant: bringing advances in biotechnology to the classroom**  
*Elaine Quinn and Anna Wedderburn (Amgen Biotech Experience)*  
14.45 – 15.30 **Plan A (if the draft specifications are available)**  
**Discussion of draft Leaving Certificate specifications**  
**Biology:** Margaret Hourigan  
**Chemistry:** Mary Mullaghy & Dr Lisa Darley  
**Physics:** Sean Finn  
**Plan B (if the draft specifications are not available)**  
**Aspects of the assessment of the Individual Investigative Study in the proposed new Leaving Certificate Biology, Chemistry and Physics specifications – The experience from Agricultural Science**  
*Humphrey Jones, followed by discussion.*  
15.30 – 16.15 **Chemical demonstrations: Education, Entertainment, Enlightenment**  
*Dr Andrew Szydlo, Highgate School, England*  
16.15 – 17.00 **ISTA Annual Business Meeting**

Venue: – The Kingsley Hotel, Western Road, Cork

- 20.00 – 20.30 **ISTA President's reception (Prof. Luke O'Neill)**  
20.30 – 22.30 **Conference Banquet & President's Address**

**The design, teaching and  
assessment of OCR GCSE  
Gateway Science Biology,  
Chemistry and Physics  
specifications**

Bethan Foulkes, OCR Awarding  
Body, Cambridge

This talk will help us to gain an understanding of how new second-level specifications are successfully designed, taught and assessed in England and Wales.

**OCR** stands for Oxford, Cambridge and RSA (Royal Society of Arts). The awarding body was founded in 1998 and is a part of the Cambridge Assessment Group. The Cambridge Assessment Group was established in 1858. It is now Europe's largest assessment agency and operates in over 150 countries, playing a leading role in developing and delivering assessments across the world.

As part of this group, the OCR Examination Board has access to unrivalled international expertise and research capability across assessment and examinations.

(11.45 – 12.30)