

The New Context: Transition from Schools into Higher Education

Royal Society of Biology Curriculum Committee and
the School of Biosciences, University of Birmingham

July 8th – University of Birmingham

Organised by:

Sarah Cox (Royal Society of Biology), Libby John (University of Lincoln & RSB Curriculum Committee), Jeremy Pritchard (University of Birmingham & RSB Curriculum Committee).



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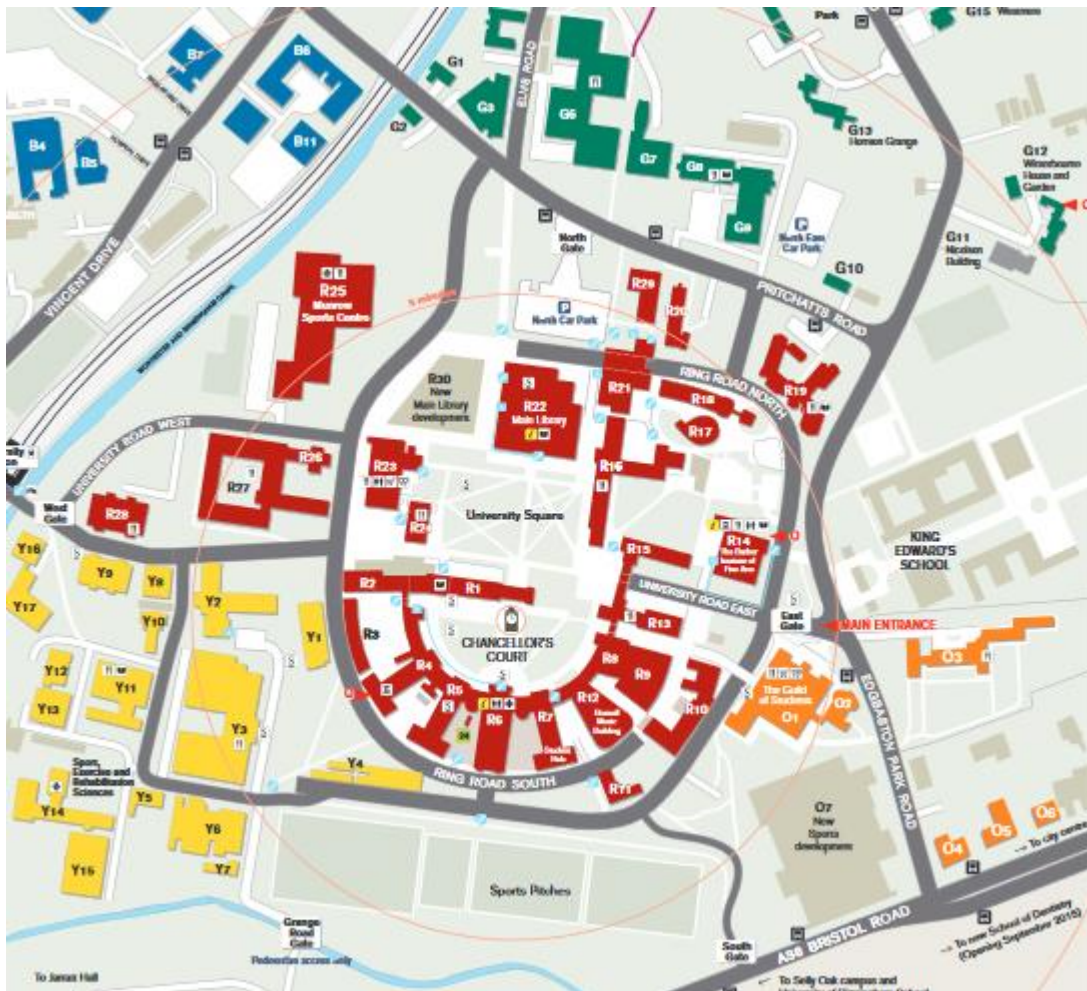
The New Context: Transition from Schools into Higher Education

Friday July 8th 2016
10:00-16:15

Lecture Theatre WG04
Biosciences Building
University of Birmingham
Edgbaston Campus
Birmingham
B152TT



The Biosciences building is R27 on the map below:



Introduction

Welcome

Thank you for joining us today at “The New Context: Transition from Schools into Higher Education”, the first event led by the Royal Society of Biology Curriculum Committee.

The day will cover:

- Changes at A level and the practical endorsement
- Maths skills
- Skills for transitioning to university
- Innovative teaching in schools and universities
- Research collaborations between schools and universities
- Discussions of post 16 biology

There will be a mixture of talks, question panels and a workshop where the committee present a draft document for discussion on post 16 biology education.

Registration

Registration will take place from **10:00 – 10:25** near **lecture theatre WG04** within the **Biosciences Building** on the **University of Birmingham Edgbaston Campus**. The event will begin at 10:25.

WiFi access



If you wish to use the internet there is the public **WiFiGuest** network available.

- 1) To connect select WiFiGuest on your device.
- 2) Open a browser and attempt to navigate to any page
- 3) You will be redirected to the sign in page, follow the steps for guest registration and sign in.
- 4) You should now be connected to the WiFiGuest network.

If you are visiting from another university you will be able to access the internet through **eduroam**.

Twitter

We will be **tweeting** throughout the event, if you wish to **join in** please use:



#RSBCC
@RoyalSocBio
@UoBbiosciences

Pre-reading

Part of the purpose of this event is to **open a dialogue** around the **post 16 biology curriculum**. The final session of the day will be focused on discussing a document that has been developed by the curriculum committee and then inform its future evolution and development. Please **read the document** prior to session 3.

Royal Society of Biology Curriculum Committee

The Royal Society of Biology Curriculum Committee was formed in the summer of 2014. Our purpose is to ensure the biology curriculum at all educational stages is as relevant as possible and prepares students for their next steps in life – whether they go on to study biology at university, use biology in a related career or use their biology knowledge as non-scientist citizens of the 21st century.

The Curriculum Committee's terms of reference are to:

- develop the Society's content criteria for biology qualifications
- consider and provide guidance and information on appropriate assessment models for biology qualifications
- advise on the Society's responses to external consultations on curriculum, qualification and assessment matters
- advise on the biology content of related science qualifications
- advise the Society's Education Training and Policy Committee on any matters associated with the biology curriculum

Membership of the Curriculum Committee

Chair

Dr Libby John FRSB

Members

Dr Mike Cassidy CBIol FRSB

Dr Nick Dixon

Professor Stuart Ferguson

Ann Fullick CBIol FRSB

Dr Dawn Hawkins

Professor Jamie Hobbs

Dr Neil Ingram

Dr Mark Kerrigan FRSB

Alistair Moore MRSB

Gayle Pook

Dr Jeremy Pritchard CSciTeach FRSB

Dr Mariann Rand-Weaver FRSB

Professor David Read FRSC

Rev Professor Michael Reiss CBIol FRSB

Elena Segalini-Bower MRSB

Dr Jane Saffell

Louise Stubberfield

Dr Mike Whelan FRSB

Observers

Sarah Cox CSciTeach MRSB

Rachel Lambert- Forsyth CSci CBIol MRSB

Agenda

10:00 – 10:25 Registration and Coffee

Session 1

Skills development between school and university

10:25 – 10:30

Opening Remarks

10:30 – 11:10

Overview of the changes to A level Biology in England and impact of reforming biology qualifications

- **Dr Katherine Hands-Taylor** Subject Specialist at OCR
- **Ann Fullick** Education Consultant
- **Dr Nick Dixon** Head of Department at Magdalen College School

11:10 – 11:30

Mathematical Skills

- **Dr Jenny Koenig** Lecturer, Researcher and Secondary Science Teacher

11:30-11:50

Transitioning from School to University

- **Dr Leanne Williams** Senior Lecturer School of Life Sciences University of Warwick

11:50 – 12:30

Skills Discussion Panel

12:30 – 13:25

Networking Lunch

Session 2

Innovative teaching and collaborations between universities and schools

13:25- 13:30

Introduction to session 2

13:30 – 14:00

Innovative Teaching Practice in Schools and Universities

- **Dr Paul Weeks** Head of Biology at Oxford High School, School Biology Teacher of the Year 2015
- **Professor Mark Clements** Director of Education / Chair in Science Education University of Lincoln, Higher Education Bioscience Teacher of the Year 2015

14:00-14:30	Schools and University Collaborations - Authentic Biology Project
	<ul style="list-style-type: none">• Dr David Colthurst Simon Langton Boys School, Authentic Biology Programme
14:30-15:00	Discussion Panel
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15:00-15:15	Coffee Break
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Session 3	Development of the post 16 biology curriculum
15:15-16:00	What do we want to see in the post 16 biology curriculum? Workshop sharing the progress of the RSB Curriculum Committee.
16:00 -16:10	Closing remarks
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Speaker Information

Chair

Dr Libby John Head of the School of Life Sciences, University of Lincoln, Chair of the Curriculum Committee



Libby has many years of experience in biological education. She is currently head of the school of life sciences at the University of Lincoln, where they have recently developed new degrees in biology, biochemistry and zoology. Libby has also held a number of undergraduate external examiner positions, giving her an excellent understanding of the diversity and range of biological education in UK universities. She chaired the Education, Training and Careers Committee of the British Ecological Society for three years for which work she was awarded the 2013 BES award. Libby's personal research and teaching expertise lies in plant ecology and her PhD from the University of Alberta was on lichens growing in the Rocky Mountains of Canada. She has been lucky enough to do field work in ecosystems from the boreal forest of the Yukon to the cloud forests of the Andes and she is passionate about getting students out on field courses to experience the wider world. During her career Libby has taught, organised, reviewed and redesigned biological curricula. She believes that universities should offer a research-led education, and that students need to be prepared for this by a school curriculum that is challenging, inspiring and rigorous.

Dr Katherine Hands-Taylor Subject Specialist at OCR



Katherine Hands-Taylor studied Biochemistry at the University of Portsmouth from 2002 – 2005, before undertaking her PhD at Kings College London, investigating the structure and function of a protein-RNA complex found in humans and linked to the genetic disorder Cartilage-Hair Hypoplasia (CHH). In 2010, she left academic research and joined the science team at the examination board OCR, initially working on the GCSE science qualifications before taking on the A Level Biology qualifications from 2013 to present. Katherine was involved in the process of A Level science reform from start to finish, working with schools and universities to ensure the new qualifications give the next generation of biologists the knowledge, skills and scientific understanding they need.

Ann Fullick Education Consultant



After studying Natural Sciences at Cambridge, Ann was a biology teacher and Head of Science for many years. She is a successful, internationally published author of more than 90 titles including many UK A Level and GCSE biology textbooks, and books for countries from Ethiopia to the Caribbean. She also produces online biology resources and learning apps. She has examining experience, has been closely involved in UK curriculum development, and is a Fellow of the Royal Society of Biology, where she is involved with the Education Training and Policy Committee, the Biology Education Research Group and the Curriculum Committee. She also represents biologists on the Curriculum Committee of the Institute of Physics.

Dr Nick Dixon Head of Department at Magdalen College School



After finishing an Applied Biology degree at De Montfort University, Nick moved to the University of Birmingham to complete his PhD in epidemiology (the virus infection of a filamentous seaweed to be specific). After seven years in academia he wanted to try something different so spent a year travelling through central and southern America. Along the way he taught English as a foreign language (so didn't escape entirely!). Nick returned from travelling to begin his PGCE at Oxford University. As a part of this year he was placed in the school he still teaches in. Magdalen College School is a mixed, semi-rural comprehensive (now academy) in Northamptonshire. Nick has been Head of Science for seven years. As well as teaching, Nick has written a number of teacher guides for the BBC including versions for Bang Goes the Theory and the Christmas Lectures. Nick has also written revision guides for Lonsdale, and most recently the AQA biology textbook for the new GCSE for Hodder. Nick currently sits on the Curriculum Committee of the Royal Society of Biology.

Dr Jenny Koenig Lecturer, Researcher and Secondary Science Teacher



Jenny's research background is in pharmacology particularly the effects of chronic drug treatment on cell responsiveness and the use of mathematical modelling in teasing out the impact of the different pathways. More recently Jenny has focussed on science education, particularly the areas where science and maths meet. Jenny taught both maths and pharmacology at the University of Cambridge and developed an entirely online course called "Essential Maths for Medics and Vets". Her education work has also involved an analysis of the biology curricula in the UK and a comparison with the US and an involvement with the design of the post-16 Core Maths curriculum. Jenny has recently taken a radical departure to train as a secondary school science teacher, completing her PGCE in Secondary Chemistry this June.

Dr Leanne Williams Senior Lecturer School of Life Sciences University of Warwick



Leanne is a Senior Teaching Fellow in the School of Life Sciences at the University of Warwick. Leanne completed a PhD in reproductive physiology before she came to Warwick and prior to that she taught Biology in FE for many years. As a result Leanne has developed a keen interest in identifying the transitional barriers students face when moving from school/college to University. During her time at Warwick she has developed a number of strategies to help students identify and refine the skills they need for effective transition to academic and social life at University.

Professor Mark Clements Director of Education / Chair in Science Education University of Lincoln, Higher Education Bioscience Teacher of the Year 2015



Mark is the Director of Education/Chair in Science Education within the College of Science at the University of Lincoln. His scientific research background is within the fields of microbiology and stem cell biology. Mark's educational practice is focused on the development of innovative approaches to learning and teaching and has contributed to a number of institutional wide initiatives on assessment and feedback, mobile learning and interdisciplinary art/science collaboration. In 2015 Mark was the recipient of the Royal Society of Biology 'Higher Education Bioscience Teacher of the Year' in recognition of his contribution to bioscience education.

Dr Paul Weeks Head of Biology at Oxford High School, School Biology Teacher of the Year 2015



Paul has been teaching for 17 years and has been the Head of Biology at Oxford High School for the past 10 years. In 2015 he received the Royal Society of Biology School Biology Teacher of the Year Award in recognition of his excellent and innovative teaching. The judges for the award said "His inquiry-based approach to biology teaching allows him to motivate children's curiosity and enthusiasm and has inspired his pupils to build scientific knowledge through engaging in the scientific process".

Dr Dave Colthurst Simon Langton School, Authentic Biology Programme



Dave started his research career as a science technician at the University of Kent. Having completed a masters and a PhD in biochemistry, he had a brief spell in the pharmaceutical industry before re-training as a teacher. His teaching career spanned the full range of schools in Kent, but for the past 15 years he has been based at the Simon Langton Grammar School for Boys in Canterbury. Following his wife's diagnosis with MS, he established MBP² – the Myelin Basic Protein Project. This project is funded by the Wellcome Trust through their public engagement programme and has grown into a National schools research programme called Authentic Biology.

Delegate list

Name	Affiliation Title	Affiliation	RSB Membership
Ms Lauren Acton	Lecturer	Coventry University	
Dr Naheed Alizadeh	Science Teacher	St Bonaventure's School.	
Dr Clare Bownes	Science Teacher	University of Birmingham School	
Mr Nicholas Brewer	Senior Lecturer/Programme Lead for Level 1+2 Core Curriculum	University of Dundee	
Professor Mark Clements	Chair of Science Education	University of Lincoln	Fellow
Dr Dave Colthurst	Authentic Biology	Simon Langton School	
Ms Sarah Cox	Schools and Education Policy Manager	Royal Society of Biology	Member
Dr Donna Dawkins	Science Teacher	University of Birmingham School	
Ms Karen Devine	External Affairs Manager	British Ecological Society	
Dr Nick Dixon	Head of Science	Magdalen College School	
Dr Juliet Dukes	Senior Scientific Officer	RSPCA	Fellow
Dr Gethin Hywel Evans	Principal Lecturer in Healthcare Science	Manchester Metropolitan University	Member
Ms Ann Fullick	Education Consultant	RSB Curriculum Committee	Fellow
Mr Alan Goddard	Senior Lecturer	University of Lincoln	
Professor Jonathan Green	Deputy Pro-Vice-Chancellor (Education)	University of Birmingham	Fellow
Ms Janice Griffiths	Director of Enterprise	University of Southampton	
Ms Holly Gupta	Engagement and Communications	Wellcome Trust	
Dr Katherine Hands-Taylor	Subject Specialist	OCR	

Ms Irmgard Haussmann	Lecturer	University of Coventry	
Ms Melanie Healy	Senior Lecturer	Swansea University Medical School	
Dr Mat Hickman	Programme Manager - Informal Science Learning	Wellcome Trust	
Dr Kris Patrick Jeremy	Lecturer	Plymouth University	Member
Dr Libby John	Head of the School of Life Sciences	University of Lincoln	Fellow
Dr Zahra Khan	Science Teacher	University of Birmingham School	
Mr Joe Kirkwood	Head of Science	Dixie Grammar School	
Dr Jennifer Koenig	Science Teacher		
Ms Rachel Melanie Claire Lambert-Forsyth	Director of Education and Training	Royal Society of Biology	Member
Mr David Lee	Lecturer	University of Birmingham	
Dr Julia Lodge	Senior Lecturer	University of Birmingham	Fellow
Mr Fiesal Mahroof	Lead Teacher of Science	WMG Academy for Young Engineers	
Dr David Martin	Senior Lecturer in Bioinformatics	University of Dundee	Fellow
Ms Nicola McCabe	Teacher of Science	The Kings School Wolverhampton	
Mr Neil Millar	Head of Biology	Heckmondwike Grammar School	
Dr Clare Michelle Miller	Senior Lecturer	University of Lincoln	Member
Mr Marc Neesam	Curriculum, Qualifications and Assessment Programme Manager	Royal Society of Chemistry	
Mr Michael Gerard Noone	Head of Biology	Radley College	Member
Dr Jeremy Pritchard	Head of Education	University of Birmingham	Fellow
Ms Helen Rai	Head of Biology	Leicester High School for Girls	

Dr Mariann Rand-Weaver	Pro Vice Chancellor	Brunel University	Fellow
Ms Hannah Russell	Head of Education and Training	Biochemical Society	
Dr Jane Saffell	Associate Dean for Science and Postgraduate Education	Imperial College London	
Ms Elena Segalini-Bower	Head of Biology	Hereford Cathedral School	Member
Mr Neil Sheldon	Vice President (Education and Statistical Literacy)	Royal Statistical Society	
Dr Rachel Stubbington	Senior Lecturer in Ecology and Environmental Sciences	Nottingham Trent University	Member
Ms Annalee Thomas	Biology Teacher	Our Lady's Abingdon Senior School	
Mr Simon Tresidder	Senior Lecturer Science Education	Birmingham City University	
Ms Katrine Wallis	Lecturer	Coventry University	
Dr Mark Ward	Field Studies Council Project Officer	Field Studies Council	
Dr Paul Weeks	Head of Biology	Oxford High School	Member
Mr Sam Welch	Biology Student	University of Birmingham	Student Member
Dr Susan Whittle	Associate Professor	University of Leeds	
Mr Waqar Yousaf	Biology Teacher	University of Birmingham School	

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Thank you to those already supporting the Royal Society of Biology through your continued membership.

Recognising Excellent Teachers



Higher Education Bioscience Teacher of the Year Award

This award provides national recognition for outstanding bioscience teaching in higher education.

Find out more at www.rsb.org.uk/HEBTOY



School Biology Teacher of the Year Award

This award provides national recognition for outstanding biology teaching in schools.

Find out more at www.rsb.org.uk/get-involved/awards-and-competitions/school-teacher-of-the-year

Chartered Science Teacher Register



Chartered Science Teacher (CSciTeach) status is a hallmark of excellence in the UK and recognises the unique combination of skills, knowledge, understanding and expertise that is required by individuals involved in science teaching and learning. Under license from the Science Council, The Royal Society of Biology can award CSciTeach status to Members and Fellows of the Society who teach science within the school or higher education sector.

If you hold **Senior Fellowship of the Higher Education Academy (SFHEA)** you can fast track your application for CSciTeach status by submitting copies of your SFHEA application and awarding certificate.

Find out more at www.rsb.org.uk/registers