

# Next steps for science education and STEM skills provision - participation, teaching and progression to higher level study 9<sup>th</sup> October 2017

## CONDITIONS FOR USE OF TRANSCRIPTS:

This document is intended to provide a timely reference for interested parties who are unable to attend the event to which it refers. Some portions are based on transcripts of proceedings and others consist of text submitted by speakers or authors, and are clearly marked as such. As such, apart from where it is indicated that the text was supplied by the speaker, it has not been possible for the transcript to be checked by speakers and so this portion of the document does not represent a formal record of proceedings. Despite best endeavours by Westminster Forum Projects and its suppliers to ensure accuracy, text based on transcription may contain errors which could alter the intended meaning of any portion of the reported content. Anyone who intends to publicly use or refer to any text based on the transcript should make clear that speakers have not had the opportunity for any corrections, or check first with the speaker in question. If in doubt please contact the forum first.

# Contents

<b><u>About this Publication</u></b>	<b>3</b>
<b><u>Agenda</u></b>	<b>4</b>
<b><u>Session Chair's opening remarks</u></b>	
Layla Moran MP, Liberal Democrat Spokesperson on Education ( <i>transcript</i> )	6
<b><u>Science in secondary schools - assessment and regulation</u></b>	
Sarah Old, Senior Manager, Standards, Ofqual ( <i>transcript</i> )	7
Questions and comments from the floor ( <i>transcript</i> )	10
<b><u>Reformed science GCSEs - assessing the first year of teaching</u></b>	
Marianne Cutler, Director, Curriculum Innovation, The Association for Science Education ( <i>transcript</i> )	14
Heidi Faure, Principal, Rosedale College, Middlesex ( <i>transcript</i> )	16
Neil Wade, Lead Subject Advisor, OCR ( <i>transcript</i> )	18
Questions and comments from the floor ( <i>transcript</i> )	20
<b><u>Science education at secondary level - current initiatives, teacher development and future priorities</u></b>	
Yvonne Baker, Chief Executive, National STEM Learning Centre ( <i>transcript</i> )	24
<b><u>Priorities for the science teaching profession - recruitment, retention and Continuing Professional Development (CPD)</u></b>	
Charles Tracy, Head of Education, Institute of Physics ( <i>transcript</i> )	27
David Shakespeare, CPD and Education Consultant, Square 2 Learning ( <i>transcript</i> )	29
Dr Julie Bélanger, Research Leader, RAND Europe ( <i>transcript</i> )	31
Questions and comments from the floor with Yvonne Baker, Chief Executive, National STEM Learning Centre ( <i>transcript</i> )	33
<b><u>Session Chair's closing remarks</u></b>	
Layla Moran MP, Liberal Democrat Spokesperson on Education ( <i>transcript</i> )	40
<b><u>Session Chair's opening remarks</u></b>	
Baroness Sharp of Guildford ( <i>transcript</i> )	42
<b><u>Innovative science teaching and embedding outdoor learning into science education</u></b>	
Elaine Skates, Chief Executive, Council for Learning Outside the Classroom ( <i>transcript</i> )	43
<b><u>Improving STEM skills provision and increasing participation in science: diversity, progression to A-levels, higher level study and science as a career</u></b>	
Charlotte Avery, Headmistress, St Mary's School, Cambridge and President, Girls' Schools Association ( <i>transcript</i> )	45
Peter Finegold, Head of Education and Skills, Institution of Mechanical Engineers ( <i>transcript</i> )	47
Joanne Gogerly, Operations Manager, Siemens Professional Education, Siemens ( <i>transcript</i> )	49
Cerys Griffiths, Executive Editor, BBC Learning ( <i>transcript</i> )	51
Professor Nazira Karodia, Dean, Faculty of Science and Engineering, University of Wolverhampton ( <i>transcript</i> )	53
Questions and comments from the floor with Elaine Skates, Chief Executive, Council for Learning Outside the Classroom ( <i>transcript</i> )	55
<b><u>Secondary school science in context - careers, diversity and industrial strategy</u></b>	
Dr Rosalind Mist, Head of Policy, Education, The Royal Society ( <i>transcript</i> )	59
Dominic McDonald, Head of Education, The Royal Institution ( <i>transcript</i> )	62
Lord Winston, Professor of Science and Society, Imperial College London ( <i>transcript</i> )	64
Questions and comments from the floor ( <i>transcript</i> )	67
<b><u>Session Chair's and Westminster Education Forum closing remarks</u></b>	
Baroness Sharp of Guildford ( <i>transcript</i> )	71
Sean Cudmore, Deputy Editor, Westminster Education Forum ( <i>transcript</i> )	72
<b><u>Comments</u></b>	<b>73</b>
<b><u>List of Delegates Registered for Seminar</u></b>	<b>74</b>
<b><u>Contributor Biographies</u></b>	<b>79</b>
<b><u>About the Core Sponsors of the Westminster Education Forum</u></b>	<b>83</b>

Please be advised that speakers' PowerPoint presentations are included within the transcript itself, just beneath the relevant speaker's text. Please note that not all speakers are able to grant permission for us to include their slides.

## About this Publication

This publication reflects proceedings at the Westminster Education Forum Keynote Seminar: Next steps for science education and STEM skills provision - participation, teaching and progression to higher level study on 9<sup>th</sup> October 2017. The views expressed in the articles are those of the named authors, not those of the Forum or the sponsors, apart from their own articles.

Although Westminster Education Forum is grateful to all sponsors for the funding on which we depend, participation in events and publications is never conditional on being a sponsor. As well as funding ongoing operations, sponsorship enables the Forum to distribute complimentary copies of publications, and offer complimentary tickets for events, to Government ministers, parliamentarians and officials most involved in policy.

This publication is copyright. Its copying, in whole or in part, is not permitted without the prior written consent of the publishers. However, extracts of the text may be reproduced for academic or review purposes, subject to the conditions of use outlined in the previous page, providing they are accurate, are not used in a misleading context and the author, their organisation and the Westminster Education Forum are acknowledged. We would also appreciate being informed.

### Westminster Education Forum

UK Headquarters  
4 Bracknell Beeches  
Old Bracknell Lane West  
Bracknell  
Berkshire RG12 7BW

T: 01344 864796

F: 01344 420121

[publications@westminsterforumprojects.co.uk](mailto:publications@westminsterforumprojects.co.uk)

### Directors

Peter van Gelder

Chris Whitehouse