

The 9th eSTEEem Annual Conference
Informing Student Success – From Scholarship to Practice
29-30 April 2020

FINAL PROGRAMME

Day 1: Wednesday 29 April 2020

Time	Session	Venue
9.30-10.00	Registration and Coffee	Hub Suite
10.00-10.05	Welcome and Introduction	Hub Lecture Theatre
	Diane Butler and Trevor Collins, eSTEEem Directors	
10.05-10.10	Opening Address	Hub Lecture Theatre
	Nicholas Braithwaite, Executive Dean, Faculty of STEM	
10.10-11.30	Opening Workshop: Addressing Inequitable Outcomes for Black Students at The OU Workshop	Hub Lecture Theatre
	Wendy Fowle, John Butcher and Darren Gray, Access, Participation and Success	
	<p>Evidence from across the sector and institutional data at the Open University suggests differential outcomes for students from different ethnic backgrounds. A student’s ethnicity can amplify disparities that exist within higher education. For example, the gap between the likelihood of white students and students from Black, Asian or minority ethnic backgrounds (BAME) getting a first or upper-second-class degree was -13 percentage points across the sector in 2017/18. For The OU with our open entry policy and social justice mission the picture is just as stark, if not more alarming.</p> <ul style="list-style-type: none"> • Our BAME student proportion is around 11%, less than half of the sector • Our BAME students are less likely to: <ul style="list-style-type: none"> ○ complete their modules than white students -4.45 (OU) and -6.96 (STEM) percentage point gap in 2017/18 	

	<ul style="list-style-type: none"> ○ pass their module -6.44 (OU) and -6.31 (STEM) percentage point gap in 2017/18 ○ achieve a good pass -19.94 (OU) and -17.13 (STEM) percentage point gap in 2017/18 <p>The term BAME is broad and of course is not a single homogenous group, all students are unique. However, breaking figures down further shows a module pass gap between Black students and white students of -13.9 percentage points, and a gap in good module pass (1:1 and 2:1) of -31.1 percentage points in 2017/18. The size of the gap has persisted for many years and shows no sign of closing.</p> <p>The emphasis on the BAME degree awarding gap is mirrored across the different UK nations. The OU's Access and Participation Plan (APP) which is currently awaiting approval by the Office for Students (OfS) requires ambitious targets to be set to reduce these gaps and contribute to their overall elimination. We need to reduce these, not just because the regulator in England is telling us to, but because it is inequitable and a damning indictment of our teaching and student support. So, how are we going to achieve the challenging targets set?</p> <p>The Access, Participation and Success (APS) team will lead an interactive session to highlight key data, share experience of their project 'Closing the Black Attainment Gap', the APP targets and pathways to success, and implication for The OU on not achieving a reduction in the gaps. The 'inclusive curriculum tool' developed by APS will be showcased.</p> <p>eSTEEem will be working closely with the STEM Boards of Study Group to commission scholarship proposals in the area of BAME attainment across the STEM curriculum and the session will include the development of scholarship ideas to a gain deeper understanding of the issues.</p>		
11.30-11.45	Morning Coffee Break		Medlar and Juniper
11.45-12.45	Parallel Session A: Short Oral Presentations – Innovations in assessment & Technologies for STEM learning		Presentation Room A
Session A Chair: Mark Endean	Catherine Halliwell and Jenny Duckworth	Can an asynchronous student conference in Open Studio develop students' critical evaluation skills?	Can a novel assessment based on student participation in an asynchronous online conference aid the development and articulation of advanced skills? We share our findings on this question focusing on the digital literacy, deeper understanding of science concepts and role of peer-to-peer feedback.

	Matthew Nelson and David Bowers	Large-scale game-based activity for delivering experience of communication within teams	A game-based activity provides student with an engaging experience of working as a team without some of the negative aspects often found in assessed practical team-working. A reflective assessment question demonstrates that students have been engaged and have learnt lessons about team roles and team-working skills.	
	Andrew Potter and Colin Blundell	Blended Tutorials in Mathematics - Simultaneous Face-to-Face and Online Learning Events	"Blended tutorials" are tutorials which take place simultaneously as face-to-face and online tutorials. We present the results of a pilot of two "blended tutorials" on the Level 3 pure mathematics module M337 Complex Analysis.	
11.45-12.45	Parallel Session B: Short Oral Presentations – Supporting Students			Presentation Room B
Session B Chair: Sally Jordan	Janette Wallace and Isabella Henman	The role of large informal online workshops to engage and enthuse students studying SDK228 an interdisciplinary level 2 module	A programme of informal interactive module wide workshops were created to support students studying SDK228. Initial evaluation suggests students feel more engaged with their peers, tutors and the module overall as a result of attendance at the workshops. This presentation explains the design, implementation and student perspective of the programme	
	Cathryn Peoples	The Change in Student Engagement with Personalised Support: An Evaluation at the Mid-way Point of an eSTeEM-funded Project	Students can often give an impression that they want more support from their tutors. This session will examine the way that personalised support, offered as part of an eSTeEM-funded project, is embraced in varying proportions across a cohort, and in particular, the way that involvement changes throughout the year.	
	Mark Jones, Sarah Chyriwsky, Judith Croston, Ulrich Kolb, Susanne Schwenzer	Online Team Investigations in Science (OTIS) – The student view of online team-working in astrophysics and space science	We present an analysis of interviews with students about their experiences on team projects in astronomy and space sciences, focussing on their views about the design and assessment of the projects, their experiences of peer learning, and the value that they place on engaging in team working activities.	

	and Sheona Urquhart			
11.45-12.45	Parallel Session C: Workshop/Demonstration – Supporting Students			Workshop Room C
Session C	Rachel Slater, Patrick Murphy, Elaine McPherson and Anne Campbell	Accessibility and inclusion in tuition: examples of individualised support	Accessibility and inclusion in tuition (AccIT) is an eSTeEM scholarship project designed to support STEM ALs by gathering and sharing examples of specific and personalised support tutors have put in place to address individual students’ needs.	
11.45-12.45	Parallel Session D: Short Oral Presentations – Technologies for STEM learning			Presentation Room D
Session D Chair: Jimena Gorfinkiel	Adeola Adeliyi, Michel Wermelinger, Jon Rosewell and Karen Kear	A systematic review of pair programming for learners of programming at a distance	As an alternative to performing a literature review, we conducted a systematic review in order to reveal the answers to our study questions pertaining to the issues of remote pair programming in teaching programming at a distance.	
	Sharon Dawes, Chris Thomson, Stephen Rice and Stephen Bowles	How Jupyter Notebooks enhance learning and teaching on TM351	Jupyter notebooks offer a way to combine teaching material with practical coding activities for data analysis. We present our initial findings in a project to examine how students on TM351 use Jupyter notebooks in their studies.	
	Patrick Wong, Helen Donelan and Tony Hirst	Understanding and mitigating students’ difficulties in undertaking complex practical activities on their computers	Practical activities can improve students understanding of technological concepts and their technical skills. Computing activities often require students to install specialised-software. When problems occur, getting immediate support is difficult as they are distance learners. This study investigated students’ experiences of using virtualisation for their practical activities and identified difficulties experienced.	

12.45-13.45	Lunch Break Delegates are welcome to browse posters over lunch in readiness for presentations on day two.		Hub Lecture Theatre
13.45-14.30	Ignite Presentations – Future Innovative Scholarship <ul style="list-style-type: none"> Matthew Nelson – Storytelling in computing education Carol Calvert and Rachel Hilliam – A qualification world? Sarah Daniell and Lorraine Waters – Evaluation of students’ accessibility and use of online tutorials and forums in Level 2 modules, with specific focus on the experience of D flag students Nick Chatterton and Eleanor Crabb – Developing the equivalent of student whiteboards for use in Adobe Connect tutorials and in forum posts Ann Grand – Learning to be an engaged research community 		Hub Lecture Theatre
14.30-14.45	Afternoon Tea Break		Medlar and Juniper
14.45-15.45	Parallel Session E: Short Oral Presentations – Employability		Presentation Room E
Session E Chair: David Conway	Andrew Potter, Gerry Golding and Sally Crighton	Promoting Good Mathematical Communication as a key Employability and Transferable Skill in Level 1 Service Mathematics	We present a learning resource designed to help support the development of Good Mathematical Communication (GMC) skills, using feedback from ALs via forums and focus groups. We consider the relevance of GMC skills to employability, under the wider umbrella of "Communication and Presentation" skills.
	Rupesh Shah, Helen Wilding, Martin Reynolds and Ray Ison	Curriculum innovation – transforming postgraduate learning systems for a world in turbulence	Academics from the Applied Systems Thinking in Practice (ASTIP) group have been involved in ongoing systemic inquiry aimed at informing the development of OU postgraduate learning. We report on research into attempts to reconfigure PG curriculum development in the context of significant institutional changes and challenges presented for distance learning organisations.
	Leonor Barroca and Matthew Walkley	Who are our apprentices?	As access and participation are pressing issues for higher education it is important to understand the profile of our apprentices as a basis for sound decisions on the future approach to apprenticeships and to the recruitment of apprentices.
14.45-15.45	Parallel Session F: <i>Workshop withdrawn from programme</i>		

14.45-15.45	Parallel Session G: Short Oral Presentations – Online/Onscreen STEM practice & Supporting Students			Presentation Room G
Session G Chair: Laura Alexander	Susan Pawley	Maximising online tutorial attendance of a high population level 1 module	The cost of providing regular online tutorials is high and so it is important that these resources are used effectively. To maximise attendance, MST124 have altered their online tutorial provision, providing module wide tuition streams based on time of tutorial, study speed and study programme. Initial results are encouraging.	
	Anne-Marie Gallen, Mark Jones and Anne Campbell	Perceptions, Expectations and Experience of Group Tuition: towards a shared understanding amongst stakeholders (part II: the student perspective)	Following an earlier project investigating the perceptions, expectations and experiences of tuition of Associate Lecturers, this presentation will review our survey of level-1 STEM students. We will summarise student expectations around tuition in groups, how these differ between online and face-to-face tuition and from the perceptions of our Associate Lectures.	
	Rachel Hilliam, Gaynor Arrowsmith, Alexander Siddons, Derek Goldrei and Cath Brown	The Mathematics and Statistics Study Site: Facts, figures and further plans	The Mathematics and Statistics (M&S) Study Site provides a one-stop-shop of information, advice and guidance, through working collaboratively with the student support team and careers to give holistic student support. By using a variety of methods to point students towards the site, the analytics show yearly increase in engagement.	
15.45-16.00	Afternoon Tea Break			Medlar and Juniper
16.00-16.30	Day One Closing Keynote Presentation			Hub Lecture Theatre
	Phil Gravestock, University of Wolverhampton Addressing Disparities in Student Success: enhancing BAME students' achievement The gap in higher education degree attainment between UK-domiciled white students and Black, Asian and minority ethnic (BAME) students has been prevalent for over 10 years. The extent of the gap becomes more			

	<p>explicit when the BAME categories are considered separately, with Black students showing the greatest gap in attainment compared with white students. This disparity in award outcomes for students from different ethnic groups has been highlighted by the Office for Students as a specific target that the higher education sector has to address.</p> <p>The diversity of students entering higher education means that it is hard to provide appropriate support to ensure that all students: develop a sense of belonging; make meaningful learning relationships; and acquire the appropriate academic skills to meet the assessment requirements to allow transition into subsequent academic levels.</p> <p>This presentation will reflect upon research that has been undertaken as part of national projects – such as ‘Disparities in Student Attainment (DiSA)’, ‘What Works?’, ‘DRIVER, Data Responsive Initiatives as a Vehicle for achieving Equity in Results’ and ‘Value-added’ – to enhance BAME students’ attainment, success and progression.</p>	
16.30-16.45	<p>eSTeEM Scholarship Projects of the Year Awards Awards for the Scholarship Projects of the Year in two categories – Innovative/Original Approach to Teaching and Enhancing the Student Experience followed by day one closing remarks by Nicholas Braithwaite.</p>	Hub Lecture Theatre
16.45-17.30	<p>Wine Down Delegates are invited to bring along their drink of choice and join colleagues to reflect on day one.</p>	Medlar and Juniper
17.30	Close	

Day 2: Thursday 30 April 2020

Time	Session			Venue
9.00-9.30	Registration and Coffee			Hub Suite
9.30-10.50	Parallel Session H: Short Oral Presentations – Technologies for STEM learning, Supporting Students & Innovations in assessment			Presentation Room H
Session H Chair: Duncan Banks	Catherine Halliwell, Simon Collinson, Rachel McMullan and Jenny Duckworth	Can a new OU Study App enhance the learning experience of students on S350, an online only module?	A new OU Study App has been trialed on a number of STEM modules since October 2019. Our project has looked at how students are using this App to aid their studies and enhance their learning experience of S350, a level 3 science module.	
	Steve Walker, Tom Olney, Carlton Wood and Anactoria Clark	Learning analytics - let's get real!	The results of some learning analytics pilots in STEM have delivered disappointing results. We discuss a realist approach to evaluation that may help to identify potentially generalisable underlying mechanisms.	
	Jake Hilliard, Patrick Wong, Karen Kear, Helen Donelan and Caroline Heaney	Using Real Time Student Feedback (RTSF) as an Emotion Awareness and Regulation Tool in an Assessed, Online, Collaborative Project	This study uses the OU VLE's Real Time Student Feedback (RTSF) facility as an emotion awareness and regulation tool during a 9-week assessed, online collaborative project in the Communication and Information Technologies (TM255) module. Preliminary findings will be presented and practical implications of using RTSF will be discussed.	
	Jim Iley and Nick Adams	Single Component Assessment Examination and Exam Feedback: the S112 experience	The S112 SCA-OES assessment strategy and approach to automated exam feedback is outlined. Students do not 'game' the assessment strategy. While S112 prepares students for Stage 2 study, particularly S209, dropout from, and performance on, S215 is significantly affected.	

			Automated exam feedback, generated using MS Excel, provides high levels of student satisfaction.	
9.30-10.30	Parallel Session I: Workshop/Demonstration – Supporting Students and Tutors			Workshop Room I
Session I	Shirley Evans, Manish Malik and Winston Graham	An AL led eSTeEM action research project to support students and tutors: challenges and opportunities	This session is about an Associate Lecture led scholarship project entitled ‘Strategies to support students and tutors with online collaborative projects: an action research project.’ Participants will have the opportunity to reflect on their own practice and/or experiences and strategies they might employ in future online group work activity.	
9.30-10.30	Parallel Session J: Workshop/Demonstration – Online/Onscreen STEM practice			Workshop Room J
Session J	Nick Chatterton, Eleanor Crabb and Kate Bradshaw	Generating graphical content for teaching: a simple and cheap way to produce diagrams/symbol rich content for forum postings and for live streaming in Adobe Connect	Bite size videos, such as those developed by the Khan Academy, have proven extremely popular with students worldwide. This workshop aims to demonstrate how effective short “pen and ink” videos can be produced rapidly, and economically, in response to student queries	
10.50-11.05	Morning Coffee Break			Medlar and Juniper
11.05-12.25	Parallel Session K: Short Oral Presentations – Community Building, Support for ALs & Employability			Presentation Room K
Session K Chair: Stephen Lewis	Janet Haresnape, Rupesh Shah, Nirvana Wynn and Barbara Jones	Building a community of STEM ALs – extension of the STEM-ByALs-ForALs programme to include more social learning opportunities	The STEM-ByALs-ForALs programme of online events – running since 2015 – enables ALs to share good practice in a supportive environment. It is helping to build community cohesion among STEM ALs. Recent expansion to include more social learning opportunities makes it particularly valuable as we move towards the new AL contract.	
	Venetia Brown, Alan Cayless and Jo Jarvis	Exploring the use of Labcasts to Support Associate Lecturers	Interactive web broadcasts provide module teams and their students an opportunity to engage in live, practical demonstrations and lab experiments. This presentation will share findings on how the use of labcasts can support ALs on a presentation and enable a greater understanding of the student experience during labcasts.	

	David Conway	What are the careers education, information, advice and guidance needs of Open University Level 1 Computing and Communication students?	A growing number of Open University (OU) students are studying for career motivations. Unlike traditional universities the majority of OU careers engagement comes from 1st year students. Students from The School of Computing and Communications are some of the highest users of careers services.	
	Fiona Aiken and Chris Hutton	Student perceptions and development of employability skills in level 1 science	S112 uses radar diagrams for students to self-assess and reflect on their employability skills development. We examined how students use radar diagrams, and how their skills develop. Interim results suggest most students do not find radar diagrams an effective tool, and a qualification approach to employability skills would be beneficial.	
11.05-12.25	Parallel Session L: Short Oral Presentations – Supporting Students & Equality, Diversity and Inclusion			Presentation Room L
Session L Chair: Alec Goodyear	Catherine Halliwell and Cath Brown	TMA Extensions: How are they used and what is their impact on student success?	Has the increase in high-intensity study resulted in more students asking for extensions? That’s certainly the perception, but how accurate is it? Our project examines how students are using extensions, and more importantly, the impact extensions have on their success.	
	Gerry Golding and Andrew Potter	Developing “use value mindsets” to enhance undergraduates’ perceptions of learning mathematics in a first-year service mathematics environment	An investigation into student perceptions of the usefulness of mathematics at Level 1. We use the concepts of “use value” and “exchange value” to explore student perceptions of their mathematical study. We present initial findings from our scholarship work into developing "use value mindsets" on MU123 Discovering Mathematics.	
	Chris Hughes, Chetz Colwell, John Clarke, Kaye Williams and Alison Bromley	Evaluating the accessibility of an alternative format of module materials in Maths & Stats	We report on an eSTeEM-funded project in which we consulted with the RNIB to evaluate a prototype alternative format designed for students in maths and stats who use assistive technology.	

	Anne-Marie Gallen, Clare Reger and Mark Bowden	Factors influencing female participation in Physical Science Postgraduate Research Programmes	Why do female graduates within Physics and Engineering choose certain doctoral research areas above others? In this presentation we will share the outputs of a survey of female nuclear fusion doctoral students focusing on the factors influencing the progression choices of women into postgraduate research within the physical sciences.	
11.05-12.05	Parallel Session M: Workshop/Demonstration – Technologies for STEM learning			Workshop Room M
Session M	Trevor Collins, Rebecca Ferguson and Eileen Scanlon	Putting Innovation into Practice – Enhancing the STEM curriculum through scholarship	What can we do to improve the impact of scholarship? In this workshop we'll explore some of the implementation frameworks designed to translate educational research into practice and consider what further support is needed at the OU to ensure our scholarship is not wasted.	
12.30-13.15	Poster Presentations Delegates are invited to vote for the best poster. The winning poster will be announced during the closing keynote session at the end of day two.			Hub Lecture Theatre
13.15-14.00	Lunch Break Delegates are welcome to continue browsing posters over lunch.			Hub Lecture Theatre
14.00-15.00	Parallel Session N: Short Oral Presentations – International partnerships & Supporting Students			Presentation Room N
Session N Chair: Shailey Minocha	Tom Olney, Mark Endean and Duncan Banks	'More Learning Designers are Needed': Identifying the instructional design competencies required for the successful implementation of the UK Open University learning design approach in three Chinese Open Universities	This paper is concerned with identifying which skills and competencies further professional development activities might focus on should Chinese Open Universities wish to embed all or part of the UKOU approach to learning design and course creation in their institutions.	
	Kerry Murphy, Jane Cullen, Eric Addae-Kyeremeh, Kris Stutchbury, Maria Velasco, Sarah Davies,	OpenSTEM Africa: Strengthening science education in Ghana	The OU has partnered with the Ghanaian Ministry of Education to enhance the quality of teaching and learning materials for practical sciences in Senior High Schools. The project leverages the experience gained in the creation of the OpenScience Laboratory and couples this to the iBox, a local file server.	

	Janice Ansine, Clem Herman, Olivier Biard and Joshua Mallet			
	Stephen Burnley and Sinead O'Connor- Gotra	Giving practical support to MSc students in the Global South	The paper presents the results of a project to determine the most effective way of supporting distance-learning MSc students in the Global South. It summarises our findings and recommendations from Kenya based on a student-led focus group, detailed interviews with students and discussions with the programme team.	
14.00-15.00	Parallel Session O: Workshop/Demonstration – Employability			Workshop Room O
Session O	Alexander Mikroyannidis	Decentralised Qualifications on the Blockchain	This workshop will explore the different ways that education and employment qualifications can be awarded, managed and verified on the Blockchain, as well as how learners can receive personalised job or course recommendations based on the qualifications they have acquired.	
14.00-15.00	Parallel Session P: Workshop/Demonstration – Supporting Students			Workshop Room P
Session P	Fiona Moorman and Karen New	STEM ISSS - where are we now? Evaluating awareness, usage and effectiveness of individual student support sessions	AL and staff tutor perspectives on usage and effectiveness of Individual Student Support Sessions (ISSS) will be presented, providing context for ‘small group’ activities, to draw on experiences and thoughts of colleagues. We anticipate that participants will gain a wider appreciation of the potential for more effective use of ISSS.	
15.00-15.15	Afternoon Tea Break			Medlar and Juniper

15.15-15.45	Day Two Closing Keynote Presentation	Hub Lecture Theatre
	<p>Helen May, Higher Education Consultant</p> <p>Achieving Positive Outcomes for All: What can we do and why does it matter?</p> <p>Never before has it been more important to evidence the impact of our work on student outcomes or the wider society. The Teaching Excellence and Student Outcomes Framework (TEF) and Access and Participation Plans (APP) require universities to demonstrate they are systematically monitoring and evaluating student outcomes; identifying any differentials; taking positive action to address them; and can evidence the impact of those interventions on the achievement of positive outcomes for all.</p> <p>Over recent times, there has been a noticeable shift of emphasis away from a focus on the inequity of opportunity towards inequity of outcome. This is exemplified in the recommended use of 'Theory of Change' by the Office for Students in the preparation of APPs, and the equal emphasis given within the TEF criteria to 'Student Outcomes' to that of 'Teaching Quality' or to 'Achievement' 'Continuation' and 'Progression' as to 'Access'. There are significant differential outcomes – whether of attainment, progression to employment/further study – particularly amongst those with protected characteristics, which Universities now need to urgently address.</p> <p>So, what does this mean for those working with students? What actions could you take? How do you know what difference you have made? This presentation will reflect on the differences you can make through your daily practices; the power of monitoring students' engagement and targeting as well as the importance of scholarship as a source of evidence.</p> <p>Helen will draw on her specialist background in inclusion as well as her significant experience as a national leader of learning and teaching. Her presentation will also be informed by her leadership of an institutional wide TEF pilot and leading the Access and Participation evaluation plan as Head of Learning and Teaching in a city based, widening participation institution.</p>	
15.45-16.00	Best Poster Prize The winning poster will be announced as voted for by delegates.	Hub Lecture Theatre
16.00	Close	