The 14th eSTEeM Annual Conference: Innovations in Impact
30th April – 1st May 2025

FINAL PROGRAMME

Day 1: Wednesday 30th April 2025

Time	Session			Online Room
10.00-10.15	**Welcome and Introduction** Sue Pawley and Daphne Chang, eSTEeM Directors			**Main Room**
10.15-10.30	**Welcome Address** Victoria Nicholas, Associate Dean, Faculty & Strategy			**Main Room**
10.30-11.15	**Parallel Session A: Access, Participation and Success**			
Chair: Andrew Potter	Chris Corcoran	Barriers and enablers to higher education: the experiences of disabled students from minority cultural backgrounds	The aim of the project was to investigate what helped and what stopped students with disabilities joining the Open University. Findings about the support given were positive although some participants found accessing the on-line material difficult to navigate due to a lack of familiarity with the OU systems.	**Room 1**
10.30-11.15	**Parallel Session B: Continuation and Completion**			

Chair: Nigel Gibson	Adam Freeman and Anne-Katrin Klehe	Evaluating students' experience of tuition in S217	Join us for a session exploring what students really think of the tuition offered on a physics module. We identify important themes resulting from a survey and focus groups for students of S217 in 23J. Share your ideas and good practice relating to your own students' experiences.	**Room 2**
10.30-11.15	**Parallel Session C: Innovations in STEM Teaching and Learning**			
Chair: Cath Brown	Janette Wallace, Lucy Anderson, Sarah Daniell and Trevor Collins	Using virtual reality tutorials with Stage 3 Health Sciences students	Come and discover how we have been using Virtual Reality (VR) to engage students in Heath Science tutorials. In this interactive session we will introduce our project, discuss the initial findings from the evaluation, and give you the opportunity to have your own VR experience.	**Room 3**
10.30-11.15	**Parallel Session D: Student Support**			
Chair: Jenny Duckworth	Fiona Aiken and Christopher Hutton	Evaluation and improvement of print packs use for Environmental Science students	The efficacy of print packs as a means of providing reasonable adjustments to some disabled students and those in secure environments on Earth and Environmental Science modules through student surveys and staff focus groups was investigated. Participants will discuss ways of implementing the	**Room 4**

			recommendations from the project more widely across STEM modules.	
11.15-11.30	**Break**			
11.30-12.15	**Parallel Session E: Access, Participation and Success**			
Chair: Darren Gray	Jim Gillen, Soraya Kouadri Mostéfaoui, Shailey Minocha, Guanzi Shen and Jason Clarke	The Role of Scholarship in addressing awarding gaps	A chaired panel discussion with three Scholarship Project Leaders who have worked on projects addressing the awarding gap across the Faculty and audience participation will be facilitated with a Question-and-Answer element to the discussion.	**Room 1**
11.30-12.15	**Parallel Session F: AL Development**			
Chair: Sally Crighton	Rupesh Shah, Janet Haresnape, Nirvana Wynn and Heather Fraser	Singing the songs of AL-led professional development	STEM-byALs-ForALs is a programme of professional development led by STEM-ALs. A developmental evaluation of the programme is underway, and in this session, we will facilitate a conversation about the future of AL-led development in STEM by introducing themes from our research and involving participants in making sense of these findings.	**Room 2**
11.30-12.15	**Parallel Session G: Student Community and Sense of Belonging**			
Chair: Scott Harvey-Whittle	Cath Brown, Sue Pawley, Fi Moorman, Karen New, Anne-Katrin Klehe, Adam	How can we promote student community? Exploring options and generating ideas	Student community is recognised to be important for retention and success – but how can we promote it? In this session you will hear an outline of a range of community-focused projects,	**Room 3**

	Freeman and Nicole Lotz		with very different approaches, before working on generating practical ideas to enhance student community within modules and beyond.	
11.30-12.15	**Parallel Session H: Student Support**			
Chair: Susan Bryan	Dhouha Kbaier and Andrew Mason	Enhancing Online STEM Education Through AI-Driven Anomaly Detection in Remote Laboratories	Discover how AI-driven algorithms can enhance student engagement in online STEM labs. This session will showcase the development of OELAssist, which applies anomaly detection to identify struggling students and recommend timely interventions. Attendees will observe real-time data collection and analysis and discuss the broader impact of AI on remote learning and student support.	**Room 4**
11.30-12.15	**Parallel Session I: Access, Participation and Success**			
Chair: Daphne Chang	Louise MacBrayne and Zoë Chapman	Is the cost of home experiments a potential barrier to learning?	The session will report findings from a completed project investigating whether financially impoverished students are being disadvantaged by the expectation to use facilities assumed to be in the home (such as a fridge) and the expectation to purchase additional consumables needed for home experiments in level one science modules.	**Room 5**

12.15-13.30	**Lunch**			
13.30-14.30 **Chair: Sue Pawley/ Daphne Chang**	**Teaching Innovation Talks** A series of short, 5-minute talks discussing module/programme level initiatives, concentrating on what works and how it has improved the student experience, followed by Q&A.			**Main Room**
	Judith Croston	Embedding coding activities in physical sciences modules via the Open Computing Lab	This talk will summarise new approaches to embedding coding activities and demonstrations across our physical sciences modules, to support students to engage with them, and to streamline student experience in an area of skills development that many find challenging.	
	Jon Golding	The Mystery disease – A whodunnit approach to learning	The Mystery disease is a 'whodunnit', drip-fed, scenario-based activity for public health students on SK297, which runs over 4 weeks.	
	Jenny Duckworth and Sarah Davies	Exploring hidden worlds: soil invertebrates through a virtual lens	We are developing a virtual microscope for students to explore some of the invertebrates that form part of the vital yet often overlooked 'hidden world' below ground. Our talk outlines how the microscope, which uses both video and still images, will work and how it builds on existing virtual microscopes used in STEM teaching.	

	Jotham Gaudoin	Developments in Teaching in Mathematics and Statistics	A brief summary of current developments and innovations within Mathematics and Statistics.	
	Derek Jones, Christian Nold, Alessandra Campoli, Vera Hale, Georgie Holden, Nicole Lotz and Emma Dewberry	Applying a Novel Tuition Strategy as a Studio Pedagogy in Distance Design Education	T190: Design Practices is a new module that uses novel ideas of 'proximity' in distance education to inform a very different tuition strategy. Central to this strategy is aligning tuition with disciplinary behaviours, structuring tuition opportunities in the curriculum, and the idea of 'tuition budget' coupled with tutor agency.	
	Daniel Payne	Lightboards – A more engaging approach to produce STEM module content?	In two recently produced modules, LHCS have been using author-produced lightboard videos. Lightboards enables the presenter to face the audience while simultaneously writing, creating a more engaging and natural presentation experience. Lightboard videos are produced by the author independently, which allows a module team to rapidly develop new module materials.	
	Daniel Gooch and Mark Hall	Duck-supported debugging	Programmers often find that their programs do not work as expected due to bugs. Rubber duck debugging is a standard technique in the software engineering industry that helps	

			programmers find these bugs. On the new module TM113, we are using origami ducks to teach this valuable professional skill.	
14.30–14.45	**Break**			
14.45–15.30	**Parallel Session J: Sustainability in the STEM Curriculum**			
Chair: Martin Braun	Hanne Bown	Helping the students to discover the meaning of global citizenship and explore sustainability within their curriculum	Demonstration of an interactive workshop to help the students discover the meaning of global citizenship and identify examples of sustainability within their curriculum.	**Room 1**
14.45–15.30	**Parallel Session K: Access, Participation and Success**			
Chair: Trevor Collins	Linda Moore, Vic Pearson, Maria Velasco and Mandy Bailey	Understanding passive withdrawals on an introductory level 1 module	While passive withdrawals are recognised, the reasons behind these are often poorly understood. This session discusses our findings as we try to gain a greater understanding of the study behaviours, circumstances and motivations that lead to passive withdrawals, using S111 Questions in Science as our case study.	**Room 2**
14.45–15.30	**Parallel Session L: Continuation and Completion**			
Chair: Chris Hughes	Emma Champion and Rosie Boltryk	How does it feel to have an extension? Experiences of Stage 1 engineering students	This project focuses on student and AL experience around extensions on engineering modules, and links to equitability and retention. The session invites you to empathise with students,	**Room 3**

			their experiences and emotions as students work through TMA submission and beyond, comparing this to some of the responses collected during this project.	
14.45-15.30	**Parallel Session M: Innovations in STEM Teaching and Learning**			
Chair: Cathy Smith	Elouise Huxor and Theodora Philcox	Combating isolation one postcard at a time…	The session will explore how sending weekly digital postcards has strengthened the tutor/student relationship and created a sense of belonging. We will show how retention rates have improved, and we will be encouraging discussion around the impact of regular contact and innovative ways of implementing this.	**Room 4**
15.30	**Formal Close of Day One**			
15.45-16.30	**Crochet Taster Session or eSTEeM Knowledge Makers**			
	Whether you're a complete novice or experienced at crocheting, everyone is welcome to join this taster session. If you're a beginner, then you will require a crochet hook (anything above 3.5mm) and some yarn. For those who are more experienced, then feel free to bring along your existing projects to share and discuss. Or… Join like-minded makers, crafters, hackers, and tinkerers at the eSTEeM ♥ Knowledge Makers! The Knowledge Makers is an Open University-wide informal gathering of friendly folks who enjoy making of all types. We know that any of you is a maker of some sort at home or work			**Craft Room 1** **Craft Room 2**

	from robotics to 3D printing, from Art and Textiles to Lego everyone has their favourite "making". This time, we are converting our regular meetups into a more virtual and eSTEeM-based event co-hosted at the eSTEeM conference. The session will be show-and-tell, and everybody is encouraged to bring what they're currently making or what they recently made and talk about it and share knowledge and experience. We'd love to hear from you. We are looking into discovering all the magic little passions that everybody has and how this can contaminate and improve your academic experience.	
16.30-17.30	**Pub Style Quiz** After an exciting day of interactive sessions, come and unwind with colleagues (and get competitive!) at our pub style quiz. No prizes, it's just for fun!	**Main Room**

Day 2: Thursday 1st May 2025

Time	Session			Online Room
9.30-10.15	**Virtual Yoga or SoTL Speed Dating**			
	Ever tried virtual yoga? Well, why not give it a go! Yoga is a great way to boost your energy, release tension, reduce stress levels and move your body. No equipment necessary as the session will be chair-based and include some standing yoga. Or…. Meet with like-minded colleagues across the STEM Faculty to share ideas and potentially create new scholarship groups through this SoTL speed dating session.			**Wellness Room** **SoTL Speed Dating Room**
10.30-11.15	**Parallel Session N: Access, Participation and Success**			
Chair: Andrew Potter	Andrew Smith, David McDade, Amaninder Singh, Martin Rothwell, Andy Reed, Phil Hackett and Amel Bennaceur	External Impact: finding your allies within Silicon Valley and working with a multitude of external stakeholders	Discover the long-term impact experiences of the Computing and Communications, Cisco Networking team and their work with educators, funders, training providers and diversity-based organisations	**Room 1**
10.30-11.15	**Parallel Session O: Innovations in STEM Teaching and Learning**			

Chair: Sue Pawley	Janette Wallace and Zoë Chapman	Experiencing co-creation of digital assets with LHCS Student Interns	Find out how LHCS staff and student interns have co-created digital assets to support student sense of belonging. In this interactive session learn about our project and create your own mini student magazine. How well do you know our students, and can you create a magazine they would enjoy?	**Room 2**
10.30-11.15	**Parallel Session P: Progression**			
Chair: Daphne Chang	Alice Fraser-McDonald, Sally Jordan, David Sharp and Teresa Sides	Exploring factors influencing progression from taught study to postgraduate research at the OU	This session presents results from an investigation into the progression of OU STEM students from taught courses to postgraduate research. An interactive activity will explore student progression via this pathway, including comparisons by School and study mode. We will discuss barriers to progression, possible improvements, and areas for further investigation.	**Room 3**
10.30-11.15	**Parallel Session Q: Sustainability in the STEM Curriculum**			
Chair: Sarah Daniell	Sarah Davies, Volker Patent, Fiona Aiken, Elaine McPherson, Maria Townsend and	Digital storytelling for sustainability education: A design workshop	This workshop explores digital storytelling as an educational tool to engage students in sustainability learning, addressing ecoanxiety while fostering action. Digital storytelling supports emotional engagement, assessment, and self-regulatory skills,	**Room 4**

	Trudi Macagnino		offering a transformative approach to teaching climate issues. Participants will interactively examine its potential, challenges, and application across disciplines.	
10.30-11.15	**Parallel Session R: Employability**			
Chair: Louise MacBrayne	Ruth Neal and Kellee Patterson	Is group work "a necessary evil"?	How do students feel when we ask them to collaborate? Gain an insight into the experience of students involved in group work, by attending our workshop. We hope this will be an interesting introduction to working with others and appreciate the challenges and opportunities experienced by our students.	**Room 5**
11.15-11.30	**Break**			
11.30-12.30	**Poster Presentations**			
	Chris Corcoran, Suz Corcoran, Catherine Comfort and Giorgio Zampirolo		Pan University Project: Enablers and Barriers for students with mental health difficulties	**Main Room**
	Louise MacBrayne, Jennie Bellamy, Isabella Henman and Kate Gibson		Postcode Inequity: Closing the Awarding Gap for Stage 1 STEM Students residing in our most deprived UK postcodes	
	Silvia Varagnolo, Zahra Golrokhi, Colum McKenna, James Openshaw, Shawndra Hayes-Budgen		Gamification to increase participation in maths practice quizzes in Level 1 Engineering modules	
	Gareth Neighbour, Sarel Marais and Russ Lewis		Employer-Facing Education – What Does It Mean to You?	

	Lorraine Waters, Karen New and Sarah Daniell		Exploring student perception of laboratory workbooks: authentic learning or missed opportunity?	
	Amaninder Singh, David McDade, Andy Reed, Andrew Smith and Eliz Hartnett		Investigate the integration of vendor certifications within Computing modules	
12.30-13.45	**Lunch**			
13.45-14.30	**Parallel Session S: Access, Participation and Success**			
Chair: Nicole Lotz	Fiona Gleed and Claudia Eckert	Making space for women in Engineering	Join us on a collaborative exploration of the landscape of extra-curricular events available to students across STEM. We will use the map to consider how such events can be used to develop community and belonging, for female Engineering students at the OU and beyond.	**Room 1**
13.45-14.30	**Parallel Session T: Student Support**			
Chair: Nick Chatterton	Cath Brown and Sue Pawley	Tutorials - One Size Doesn't Fit All! How can we provide tutorials to enhance the learning of all our students?	We have an extremely varied student cohort – how can we make best use of tutorial time to support all our students? In this session we will outline our differentiated tutorial programme, leading into a workshop where participants will focus on developing ideas to enhance tutorial provision on their own modules.	**Room 2**
13.45-14.30	**Parallel Session U: Assessment and Feedback**			

Chair: Gemma Warriner	Stuart Auton and Soraya Kouadri Mostéfaoui	Towards GenAI Proof Assessments	The uncited use of Generative AI (GenAI) in assessments is rising. In response to this, the TT284/TM252 Web Technologies Module Team identified strategies to improve assessments' resistance to GenAI-based shortcutting. The overall impact of these strategies was a much-reduced number of academic conduct cases in the 2023J presentation.	**Room 3**
13.45-14.30	**Parallel Session V: Innovations in STEM Teaching and Learning**			
Chair: Fiona Aiken	Trevor Collins, James Smith and Ben Hawkridge	The OpenXR Studios Showcase: Immersive methods for STEM education at a distance	Join us for this showcase session where we will demonstrate the facilities of the OpenXR Studios and discuss how XR can be used to enhance STEM education and the opportunities for embedding these methods within your teaching.	**Room 4**
13.45-14.30	**Parallel Session W: Access, Participation and Success**			
Chair: Lorraine Waters	Jenny Duckworth, Harriet Marshall and Jennie Bellamy	Does sharing slides in advance of online learning events impact student attendance?	Participating in online learning events is important for interaction between students and with their tutors. Access to slides in advance of online learning events is thought to benefit many students, including those with disabilities. But does it affect attendance? How would you react if you were in the students' shoes?	**Room 5**
14.30-14.45	**Break**			

14.45-15.30	**Nick Braithwaite Valedictory Lecture** **The OpenSTEM Labs story from scholarly seeds (innovation) to pedagogic harvest (impact)** The OpenSTEM Labs aim to connect distance learners to real data through authentic interfaces with labs, observatories, workshops and field-sites. This talk will trace the origins of the OpenSTEM Labs back to the curiosity of colleagues in the nationally funded Physics Innovation Centre of Excellence in Teaching & Learning and to the innovation triggered by financial models that undermined the viability of residential schools. The rationale for practical work is that: (i) 'hand-on' experience allows students to better understand complex concepts; (ii) practical work develops employability skills in problem-solving, critical thinking, technical ability (iii) motivation and interest are enhanced by active engagement; (iv) practical work prepares students for their future careers. There are many opportunities to use practical work in distance learning with varying degrees of sophistication including 'sink-top' explorations, home-grown plants, home experiment kits, interactive screen experiments (using pre-recorded data), remote experiments (controlled over the internet) and interactive engagements with staff and students in remote technical spaces. The OpenSTEM Labs provide a scalable and impactful means of delivering these last three classes of activity.	**Main Room**
15.30-15.45	**eSTEeM Scholarship Projects of the Year, Best Poster Presentation, Most Immersive and Engaging Session Awards followed by Closing Remarks**	**Main Room**
15.45	**Conference Close**	