



SMEC 2018 Tuesday 26th June 2018
DCU Institute of Education, St. Patrick's Campus.

8.30 Registration Opens

9.15 – **Keynote 1: Professor Merrilyn Goos, Director of EPI*STEM, University of Limerick.**

10.30

Research that makes a difference: Why impact matters
Heaney Lecture Theatre (G114)

10.30 – 10.50 Coffee *Library reception area outside Heaney Theatre*

Parallel Sessions and Workshops 10.55 – 1.00

10.55 –	Parallel Session 1	Parallel Session 2	Parallel Session 3	Workshop 1
11.55	<i>Lesson Study</i>	<i>Policy, systems,</i>	<i>Improving STEM</i>	
	<i>E401</i>	<i>standards</i>	<i>Teaching A</i>	<i>Lego Innovation</i>
		<i>E403</i>	<i>E405</i>	<i>Studio</i>

12.00 –	Parallel Session 4	Parallel Session 5	Parallel Session 6	Workshop 2
1.00	<i>Beyond STEM:</i>	<i>Working With STEM</i>	<i>Improving STEM</i>	
	<i>STEAM education,</i>	<i>Teachers A</i>	<i>Teaching B</i>	<i>Lego Innovation</i>
	<i>Open schools and</i>	<i>E403</i>	<i>E405</i>	<i>Studio</i>
	<i>more</i>			
	<i>E401 (12- 1.15)</i>			

1.00 - 2.00 Lunch *Canteen*

2.00 – **Keynote 2: Professor Anna Steinweg, University of Bamberg.**
 3.05 ***Quality Enhancement in Mathematics Education: Some Insights into German Initiatives and Research***
Heaney Lecture Theatre (G114)

Parallel Sessions and Workshops 3.10 – 4.10

3.10 -	Parallel Session 7	Parallel Session 8	Parallel Session 9
4.10	<i>Investigating STEM</i>	<i>Working With STEM</i>	<i>Improving STEM Teaching C</i>
	<i>Teaching</i>	<i>Teachers B</i>	<i>E405</i>
	<i>E401</i>	<i>E403</i>	

4.10 - **Coffee**
 4.30 *Library reception area outside Heaney Theatre*

4.30- **Keynote 3: Professor Deirdre Butler, Centre for the Advancement of STEM**
 5.45 **Teaching and Learning (CASTeL), Dublin City University.**
STEM: More than the sum of its parts

-Close-

Time/Location of presentation *Title and Authors*

10.55 – 11.55 E401	Lesson Study A Theory-Driven Evaluation of Lesson Study as a Model of Professional Development to Support the Enactment of the New Primary Mathematics Curriculum Tracy Curran The Generation of ‘Powerful Mathematical Thinking’ through Lesson Study Thérèse Dooley Innovative Approaches to STEM Initial Teacher Education: The Case of Lesson Study Mairéad Hourigan, Aisling M. Leavy Developing Pedagogical Content Knowledge in Initial Teacher Education: Peer Assisted Tutoring and Lesson Study Aoibhinn Ní Shúilleabháin, Maria Meehan
10.55 – 11.55 E403	Policy, Systems, Standards European STEM Schools Report: Key Elements and Criteria Noelle Billon, Agueda Gras-Velazquez The Future ‘Vision’ for Science Education: A Critical Analysis of the STEM Education Policy in an Irish Context Nicola Broderick Accrediting Pre-Service Teachers' Innovative Practice in Primary Science within an ITE programme; Why and How? John McCullagh, Andrea Doherty How Numerate are Pre-Service Teachers? Kathy O’ Sullivan, Dr. Niamh O’ Meara, Merrilyn Goos, Paul F. Conway
10.55 – 11.55 E405	Improving STEM Teaching A A Temporal Profile of Students’ Attitudes to Learning from a Secondary School Science Classroom Robert Clarke Improving problem-solving abilities of high achieving transition year students Aidan Fitzsimons, Eabhnat Ní Fhloinn Bringing Computational Thinking into STEM Education in Primary School Margaret Leahy, Deirdre Butler, Deirdre Mc Quaid, Róisín Ryan, Francis Tormey Computational Thinking via App Inventor – Lessons from the Irish Context Monica Ward, Gary Conway, Julie Powers, Julie Regan
10.55 – 11.55 Lego Innovation Studio	Workshop Investigating Students' Learning of Differential Equations in Physics Diarmaid Hyland, Paul van Kampen, Brien Nolan
12.00 – 1.15 E401	Beyond STEM: STEAM Education, Open Schools and More Developing Open Schooling in Ireland: Examining Schools as Evolving Learning Ecosystems Paul Grimes, James Lovatt, Eilish McLoughlin, Caitríona Mordan, Padraig Murphy

Connecting Voices Across Disciplines – STE(A)M in Junior Cycle

Aine Woods, David King

STEAM Education Outside the Classroom – a CPD model

Orla Kelly, Tomas Aylward, Yesim Tunali Flynn, Janet McKennedy

WiSTEM2D: Connecting Women in Science, Technology, Engineering, Math, Manufacturing and Design

Regina Kelly, Oliver McGarr, Merrilyn Goos

Education for Sustainable Development through Inquiry-Based Science: Exploring a Programme of Professional Development for Irish Primary Teachers

Cliona Murphy, Greg Smith, Benjamin Mallon

**12.00 – 1.00
E403**

Working With STEM Teachers A

Action Research Facilitating Belief Change for Out-of-Field Mathematics Teachers

Ciara Lane, Máire Ní Ríordáin

The Evaluation and Design of Tasks by Science and Mathematics Pre-Service Teachers

Majella Dempsey, Ann O'Shea

PRiME: A Project to Promote Subject Leadership in Primary Mathematics Among Student Teachers

Maurice O'Reilly, Thérèse Dooley, Paul Grimes, Lorraine Harbison, Aisling Twohill

The RDS STEM Learning Programme: Challenging Science Facilitation

Karen Sheeran, Sandra Austin, Odilla Finlayson, Maeve Liston, Tom McCloughlin, Cliona Murphy, Greg Smith

**12.00 – 1.00
E405**

Improving STEM Teaching B

A Q Methodology Approach to Exploring Second Level Students' Perceptions of Science Teaching, Learning, and Assessment

Niamh Burke

Conceptual Change in Upper Second Level Electrostatics – The Use of Structured Inquiry

Richard Moynihan, Paul van Kampen, Odilla Finlayson, Eilish McLoughlin

In Support of Open Learning Outcomes in Leaving Certificate Chemistry: The Curious Case of The 'Cross' Experiment

John O'Reilly

Augmented Reality and Mathematics – a Taster App

Monica Ward, Odhran Daly, Joseph Travers

**12.00 – 1.00
Lego
Innovation
Studio**

Workshop

Blurring the Boundaries Between Informal and Formal Science in the Classroom

Claudia Fracchiolla, Shane Bergin

**3.10 – 4.10
E401**

Investigating STEM Teaching

A Cognitive Theory for Mathematics Methodology on an Initial Teacher Education Programme

Cornelia Connolly, Tom Cosgrove, Tony Hall

Teacher and Student Experience of Inquiry in the Context of SSI: A Comparison of Two Approaches

Ruth Chadwick, Eilish McLoughlin, Odilla E. Finlayson

Teacher as Resource? How Might the Role of the Teacher in Fostering Powerful Mathematical and Language Practices be Analysed?

Miriam Ryan

Policy and Practice in the use of Multiple Connected Representations

Niamh O'Meara , Patrick Johnson , Aisling Leavy

**3.10 – 4.10
E403**

Working With STEM Teachers B

Nature of Science in Initial Teacher Education - Illustrated Case Studies

Alison Cullinane, Sibel Erduran, Paul Conway

STEM Discovery Week 2018

Adrienn Pap, Róbert Baldursson, Evita Tasiopoulou, Noelle Billon, Agueda Gras-Velazquez

Supporting and Enhancing the STEM and Arts Capacity of Primary Teachers and Schools

Colette Murphy, Alice D'Arcy, John O'Halloran, Fiona Naughton

DiagnoseDys – a Dyscalcula diagnosis App

Monica Ward, Méabh Horan, Joseph Travers

**3.10 – 4.10
E405**

Improving STEM Teaching C

Using the Knowledge Quartet to Analyse University Mathematics Teaching

Sinéad Breen, Maria Meehan, Ann O'Shea, Tim Rowland

Undergraduate Mathematics: Engagement in Live Lectures versus Flexibility of Online Videos

Emma Howard, Maria Meehan, Andrew Parnell

The Development of a Framework to Assess Technology Enhanced Resources for Mathematics Education

Caitríona Ní Shé, Ciarán Mac an Bhaird, Eabhnat Ní Fhloinn, Ann O'Shea

The Rule of 3; A Scaffold for Teaching Chemical Maths

Natalie O'Neil
