

# STEM Education Conference

## Provisional Program

Wednesday October 5<sup>th</sup>

7.30am	Registration opens and Welcome Breakfast				
8.45am	<p><b>Conference Opening</b>  Vice-Chancellor, Professor Jane den Hollander, Deakin University  Deputy Premier, The Hon James Merlino  Conference Convenor, Dr Linda Hobbs</p> <p><b>Perspectives on Elementary STE(A)M Education: Silos, Stews, and Bridges</b>  Richard Lehrer, Vanderbilt University</p> <p><i>Venue: ke1.207 Lecture Theatre</i></p>				
10.00-10.20am	Morning Tea				
10.20am – 12pm	CONCURRENT PAPER SESSIONS 1 (20 mins plus 5 min question time)				
10.20am	TEACHER EDUCATION <i>Chair: Chris Speldewinde</i>  <i>Venue: ke1.207 Lecture Theatre</i>	TEACHING APPROACHES <i>Chair: Coral Campbell</i>  <i>Venue: ke1.202</i>	STEM PROGRAMS <i>Chair: Colleen Vale</i>  <i>Venue: ke2.102</i>	SCHOOLS AND UNIVERSITIES <i>Chair: Leissa Kelly</i>  <i>Venue: ke2.108</i>	INTERDISCIPLINARY STEM <i>Chair: John Cripps Clark</i>  <i>Venue: ke2.202</i>
	Teaching for tomorrow - Applying authentic contexts in STEM teacher education  <i>Denise MacGregor and Bruce White</i>	Geoscience and Digital Technologies: Context and Considerations  <i>Emily Rochette</i>	The ESTEME model – using engineering to assess and extend STEM learning  <i>Dan Jazby</i>	Towards building authentic understandings of contemporary science practices for science educators	Conceptualising and implementing interdisciplinary approaches to STEM Education  <i>Jan Van Driel and David Clarke</i>

				<i>Deborah Corrigan, Greg Lancaster, Lisa Fazio and Joanne Burke</i>	
10.45am	Advancing Science and Engineering through Laboratory Learning: application of ASELL in Victorian Schools  <i>John Long, Kieran Lim and Peta White</i>	Starting a revolution inside our classrooms with simple and engaging Arduino circuit boards  <i>Paulo da Silva</i>	Evaluating the CSIRO Indigenous STEM Education Project  <i>Michael Tynan</i>	Representation of modern research and development practices in the curriculum  <i>Stuart Palmer, Russell Tytler and Leissa Kelly</i>	Inter-disciplinary mathematics: Old wine in new bottles?  <i>Brian Doig and Wendy Jobling</i>
11.10am					
11.35am	How does the influence of Lesson Study impact on the learning of teacher education students to teach primary science?  <i>Barbara Black</i>	Integrating science and technology in kindergarten  <i>Christine Preston</i>	Growing Tall Poppies: Findings from a partnership program between students and scientists  <i>Eroia Barone-Nugent and Peter Hubber</i>	Evaluating university-led STEM outreach  <i>Efrat Eilam</i>	How we might evaluate the impact of STEM Education for Australian students  <i>Christine Redman</i>
		Building STEM capability – the imperative of getting schools on board  <i>Chris Goy and Carley Brennan</i>	Learning in STILE: Students interacting with an online science learning platform  <i>Connie Cirkony, Peter Hubber and Patrizia Luna</i>	Fast Cars in Primary Schools, a pilot programme  <i>Jason Steinwedel</i>	STEM and educational cynicism  <i>Maurizio Toscano</i>
fcon12pm-1pm	Lunch				
1pm – 2.25pm	WORKSHOPS 1 (40 minutes)				
	<i>Venue: ke1.202</i>	<i>Venue: ke2.102</i>	<i>Venue: ke2.108</i>	<i>Venue: ke2.202</i>	
1pm	How to Engage Students in Mathematics Using Real World Context  <i>Jillian Kenny</i>	The TAP: STEMming from community  <i>Andrea Vallance and Anne Frazer</i>	Renewable energy as a relevant context for engaging students  <i>Pennie Stoyles</i>	Kindergarten design school – are you up to the challenge?  <i>Christine Preston</i>	
1.45pm	Computational Thinking: What’s coding got to do with it?  <i>George Aranda</i>		Incorporating Google Earth into Year 9 Earth Science  <i>Emily Rochette</i>	Conceptualising and contextualising STEM in an Australian context  <i>Ann Osman</i>	
2.25pm – 2.45pm	Afternoon Tea				

2.45pm – 4.10pm	WORKSHOPS 2 (40 minutes)			
	<i>Venue: ke1.202</i>	<i>Venue: ke2.102</i>	<i>Venue: ke2.108</i>	<i>Venue: ke2.202</i>
2.45pm	STELR Sustainable Housing Workshop  <b><i>Peter Pentland</i></b>	Investigating real world problems in junior secondary mathematics  <b><i>Sharon Hogan</i></b>	Fostering Curious and Enquiring Young Learners  <b><i>Jill Cheesman, Kerry Driscoll and Dianne Golemac</i></b>	Professional Learning Communities as a Model of Professional Development in Pre-Service Teacher STEM Education  <b><i>Duncan Symons</i></b>
3.30pm	STEM: Sustainability Waste Reclamation Project  <b><i>Leonie McGlashan and Matthew Sloan</i></b>	A Roadmap to STEM Literacy: Examples from a School in Western Australia  <b><i>Nathan Curnow</i></b>	STEM –It’s Child’s Play  <b><i>Peter Hope</i></b>	Immersion in integrative STEM: recognising the role of engineering in STEM education  <b><i>Emma Stevenson</i></b>
4.15pm – 5.15pm	KEYNOTE PRESENTATION Introduction by Dr. Linda Hobbs, Deakin University <b>Building STEM teaching capability in schools: Case study of the Successful Students-STEM Program</b>  <i>Venue: ke1.207 Lecture Theatre</i>			
5.15pm	Conference close for end of Day 1			

**Thursday October 6<sup>th</sup>**

8am	Registration opens			
8.45am	<p>CONFERENCE OPEN Conference Convenor – Day 2 Welcome</p> <p>KEYNOTE PRESENTATION Introduction to Julian Williams, The University of Manchester <b>“Becoming un-Disciplined by Science and Mathematics: the life and death of STEM”</b></p> <p><i>Venue: ke1.207 Lecture Theatre</i></p>			
10.00am	Morning Tea			
10.15am – 11.55am	CONCURRENT PAPER SESSIONS 2 (20 mins plus 5 min question time)			
10.15am	<p>REACHING OUT THROUGH STEM <i>Chair: Kathleen Hayes</i></p> <p><i>Venue: ke1.202</i></p>	<p>STEM LEARNERS IN CONTEXT <i>Chair: Susie Groves</i></p> <p><i>Venue: ke2.102</i></p>	<p>DESIGNING AND TECHNOLOGY <i>Chair: George Aranda</i></p> <p><i>Venue: ke2.108</i></p>	<p>FRAMING STEM FOR EARLY YEARS <i>Chair: Brian Doig</i></p> <p><i>Venue: ke2.202</i></p>
	<p>Understanding high mathematics ability in Indigenous students <i>Peter Merrotsy</i></p>	<p>Literature Review - What are the teaching and learning activities that "Turn students on to Science"? <i>Liz Kelly</i></p>	<p>The effectiveness of an integrated 'Project Based' curriculum on student attitude <i>Ryan Healy and Coral Campbell</i></p>	<p>Early Learning in STEM: Multimodal learning in the 21st century <i>Pat Drake, Kirsten Sadler and Nicola Yelland</i></p>
	<p>Changing attitudes to learning physics through participation in the Victorian Young Physicists Tournament <i>Scott Daniel</i></p>	<p>Building the confidence and competence of pre-service primary teachers to teach STEM using an authentic, team-based, integrated project incorporating professional experience <i>Peter Cox, Premnadh Kurup and Craig Deed</i></p>	<p>Developing STEM and Imagineering in Victorian secondary schools <i>Mike Brown and Eva Dakich</i></p>	<p>Early childhood STEM pedagogy and practices: educator experiences <i>Coral Campbell and Chris Speldewinde</i></p>
	<p>Inspiring Young Scientists: Connecting school science with our community <i>Nadine Frankel and Kerry McCarthy</i></p>	<p>Unpacking STEM skills for vocational education <i>Gitta Siekmann</i></p>	<p>Propelling rockets and building bridges through STEM <i>Jenny Tiglias and David Rusden</i></p>	<p>Patterning as a vehicle for trans-disciplinary knowledge and skills development in early years STEAM education</p>

11.30am				<i>Lihua Xu, Shelley Hannigan and Anna Kilderry</i>	
	Re-imagining maths education at scale <i>Richard Wilson and Michaela Epstein</i>	International initiatives attracting girls into under-represented STEM areas <i>Victoria Millar</i>	The power of the robot - STEM in the 21st Century <i>Debora Lipson</i>	STEM and Curriculum <i>Rhyce Mahon and Shahan Illangakoon</i>	
11.55am	Lunch				
12.55pm-2.20pm	INVITED PRESENTATIONS (40 minutes)				
	<i>Venue: ke1.202</i>		<i>Venue: ke2.102</i>		<i>Venue: ke2.208</i>
12.55pm  1.40pm	1. Implementing STEM Approaches in Diverse Secondary School Contexts <i>Judy Anderson</i>	2. Models of pre-service teachers interacting with scientists and engineers <i>Russell Tytler, Stuart Palmer, Peta White, Leissa Kelly and Mary Gibson</i>	3. STEM Connections, the real world and school industry partnerships <i>Deborah Palmer</i>		
	4. What should Science look like in interdisciplinary STEM? <i>Vaughan Prain and Russell Tytler</i>		5. DET, Digital learning and STEM Branch <i>Marc Blanks, Lynn Davie and Wendy Macpherson</i>		
2.25pm – 3.50pm	WORKSHOPS 3 (40 minutes)				
	<i>Venue: ke1.202</i>	<i>Venue: ke2.102</i>	<i>Venue: ke2.108</i>	<i>Venue: ke2.202</i>	<i>Venue: ke1.207 Lecture Theatre</i>
2.25pm	Why kids need to learn to code <i>Marita Nicholas</i>	STEM education in action through project based assessment <i>John Meng</i>	Making STEM Truly Transdisciplinary <i>Jonathan Shearer and Mei Liu</i>	High Impact STEM practices in Middle Years <i>Tara Robertson, Zen Muller and Rowan O'Callaghan</i>	
3.10pm	Developing new mathematics teacher learning in schools and the STEM agenda <i>Pat Drake</i>	Key pillars for a successful & sustainable STEM program in schools <i>Scott Mcleod, Toby Kidd, Jacqui Watson and Russell Walker</i>	How to Implement Authentic STEM activities in Schools <i>Glenn Carmichael</i>	Finding <i>design technology</i> in science <i>Nicola Dziadkiewicz and Angela Gigliotti</i>	<b>Invited workshop:</b> STEM education for Women and Girls <i>Wendy Lewis</i>
3.50pm - 4.00 pm	Afternoon tea				
4.00	Plenary and roundtable discussion “The future of STEM (Key issues and next steps): Responding to the experts”: analysis, discussions, contributions from the floor				

	<i>Venue: ke1.207 Lecture Theatre</i>
5pm	Conference Ends

**Friday October 7<sup>th</sup>**

9.30am	Registration for site visits	
10. 0am	Site visits depart Waurnd Ponds	
	<b>SITE VISIT ONE</b>  Belmont High Geelong Baptist St Josephs	<b>SITE VISIT TWO</b>  Oberon High School Matthew Flinders Grovedale
3.30pm	Site visits return to Waurnd Ponds	