

# ACSME CONFERENCE 2017

Monash University, Clayton Campus 27-29 September

## Conference Program

<b>Day 1</b>		
9.00-10.00	Registration (S1-S4 foyer)	
10-10.15	Welcome from the Dean of Science, Professor Jordan Nash (S3)	
10.15-11.00	<b>Keynote 1 (S3) — Chair: Cristina Varsavsky</b> A road to success: Preparing students for an unknown career <i>Karen Burke da Silva</i>	
11.00-11.30	Tea/Coffee (GCF foyer)	
11.30-12.30	<b>Orals 1: Employability (S3)</b> <b>Chair: Gwen Lawrie</b> Deviation from STEM Peers and Employers in Employability Focuses: The Case of Maths, Stats, Physics and Astronomy Students <i>Serene Lin-Stephens, Maurizio Manuguerra, James Downes, Judith Dawes, Carolyn Kennett, John Uesi</i>  Graduate employability in science: Academics' perceptions <i>Mahbub Sarkar, Tina Overton, Chris Thompson, Gerry Rayner</i>  Beyond placements: Using curriculum mapping to embed WIL across a chemistry major <i>Erica Smith, Jackie Reed</i>	<b>Orals 2: e-resources and tools (S4)</b> <b>Chair: Theo Hughes</b> Optimising video feedback: What assessment fits best? <i>Jack Wang, Hoon Siang Gn, Yung-I Liu, Peter Worthy</i>  Do students learn introductory physics effectively in an online environment? <i>Elizabeth Angstmann</i>  Using industry developed online tools in tertiary agricultural science teaching <i>Amy Cosby, Mark Trotter, Wendy Fasso, Sue Gregory</i>
12.30-1.30	Lunch (GCF foyer)	
1.30-1.55	<b>Bites 1: Thinking skills (S3)</b> <b>Chair: Yvonne Hodgson</b> Evaluating the metacognitive skills of first year allied health students in anatomy <i>Angelique Sweep, Tracey Langfield, Kay Colthorpe, Louise Ainscough</i>  Addressing gender disparity in the understanding of projectile motion <i>Umairia Malik, David Low, Kate Wilson</i>  Do our students have a weight problem? <i>David Low, Kate Wilson</i>  Transformations of records usage in higher education <i>Kei Wei Lam, Kay Colthorpe, Louise Ainscough</i>  Pathways to creating inclusive learning environments through adaptation of	<b>Bites 2: Learning in the lab (S4)</b> <b>Chair: Elizabeth Yuriev</b> Can spreadsheets be used to engage students with open investigations in school science? <i>Vidya Kota, Scott Cornish, Manjula Sharma</i>  The ASELL Schools national project <i>Manjula Sharma, Scott Cornish, Alexandra Yeung, Scott Kable</i>  Investigating students' experiences of undergraduate science experiments across 5 disciplines: are student experiences really that different? <i>Scott Cornish, Alexandra Yeung, Scott Kable, Manjula Sharma</i>  Supporting decision making in the lab <i>Angela Ziebell, Stephen George, Chris Thompson, Tina Overton</i>

	<p>multimodal external representations used in chemistry lectures <i>Joao Elias Vidueira Ferreira, Gwendolyn Lawrie</i></p>	<p>Trends in level 1 chemistry students' laboratory anxiety and self-efficacy <i>Cara Rummey, Dino Spagnoli, Tristran Clemons</i></p> <p>Using iPads in a first year chemistry laboratory to enhance student learning <i>Suzanne Boniface</i></p>
2.00-3.00	<p><b>Orals 3: Employability (S3)</b> <b>Chair: Janet Macauley</b> Building employability skills in a biomedical science capstone unit <i>Daniel Czech, Maria Demaria, Yvonne Hodgson</i></p> <p>Developing undergraduate careers awareness and employability skills via an assessed professional development program <i>Julia Choate, Sandy Cran, Maria Demaria</i></p> <p>Barriers and opportunities for engaging science students in WIL <i>Jo Elliott, Trina de St Jorre, Liz Johnson</i></p>	<p><b>Orals 4: Thinking skills (S4)</b> <b>Chair: Daniel Southam</b> A cross sectional study of performance on a pilot chemistry critical thinking test <i>Stephen Danczak, Chris Thompson, Tina Overton</i></p> <p>Critical thinking: A STEM industry perspective <i>Alastair Pearl, Ian Larson, Laurence Orlando, Gerry Rayner</i></p> <p>Cultivating creative thinking in science students <i>Jasmina Lazendic-Galloway</i></p>
3.00-3.30	Tea/coffee (GCF foyer)	
3.30-4.15	<b>Student panel (S3) — Chair: Chris Thompson</b> The science student experience in 2017	
4.15-4.30	<b>Poster bites (S3) — Chair: Tina Overton</b> Sally Schaffer, Sally Schaffer, John Long, Michelle Coulson, Sharon Flecknoe, Nicholas Tran, Kristy Winter, Ryan Lopez, Alexandra Yeung	
4.30-6.30	<b>Posters, drinks, nibbles (GCF foyer)</b>	
<b>Day 2</b>		
9.00-9.45	<b>Keynote 2 (S3) — Chair: Chris Thompson</b> Teaching large classes without lectures <i>Paul Francis</i>	
9.45-10.15	<p><b>Bites 3: Identities (S3)</b> <b>Chair: Suzanne Boniface</b> Transition into STEM study: Developing strategies to engage indigenous students <i>David Collins, Lisa Godinho, Michelle Levitt, Lyn O'Neill, Mick Moylan, Syd Bordell</i></p> <p>Academic attitudes to service teaching <i>D Clifton, S McKillup</i></p> <p>Who are we? The identity of STEM educators <i>Rachel Sheffield, Susan Blackley, Dawn Bennett</i></p> <p>The impact of gender on the career plans of undergraduate chemistry students in Australia, New Zealand and the UK <i>Jared Ogunde, Tina Overton, Chris Thompson</i></p>	<p><b>Bites 4: Supporting students (S4)</b> <b>Chair: Jim Pettigrew</b> We built it, where are they? <i>Don Shearman, Lyn Armstrong</i></p> <p>Development of an instrument to investigate affective factors impacting students' mathematics success in an enabling program <i>Jasmine Ng, Kung-Keat Teoh</i></p> <p>Supporting students with disabilities in our undergraduate classes <i>Lisa Starkey</i></p> <p>Structure mathematics support with flexible learning modes: Who, what, why, where, when and how? <i>Deborah Jackson</i></p> <p>Looking for innovative and efficient teaching methods for first year university mathematics <i>Jelena Schmalz, Xenia Schmalz</i></p>

10.15-10.45	Tea/coffee (GCF foyer)	
10.45-11.45	<p><b>Orals 5: Assessment (S3)</b>  <b>Chair: Simon Bedford</b>          Prompting undergraduate students' metacognition of learning: Implementing meta-learning assessment tasks in the biomedical sciences  <i>Kay Colthorpe, Tania Sharifirad, Stephen Anderson, Kirsten Zimbardi</i></p> <p>Students created notes as an exam aid: A cross disciplinary content analysis  <i>Jo-Ann Larkins</i></p> <p>Open-note examinations as opportunities for meaningful learning and assessment  <i>Elizabeth Yuriev, Michelle Lazarus, Daniel Malone</i></p>	<p><b>Orals 6: Lab learning (S4)</b>  <b>Chair: Siegbert Schmid</b>          'You thought you did really well?' Examining the relationship between self-evaluation, attributions and confidence in anatomy practical exams  <i>Julian Vitali, Louise Ainscough, Tracey Langfield, Kay Colthorpe</i></p> <p>Laboratory aims and expectations: Measuring the gap between students and teaching staff  <i>Stephen George, Tina Overton, Chris Thompson</i></p> <p>Redesigning the lab component of a bridging chemistry unit  <i>Catherine Rowen, Leonie Hughes, LanChi Koenigsberger</i></p>
11.50-12.20	<p><b>Bites 5: Developing skills (S3)</b>  <b>Chair: Simon Pyke</b>          Transitioning to the flipped classroom: Impacts on student satisfaction  <i>Laura Dooley, Sarah Frankland, Elise Boller, Elizabeth Tudor</i></p> <p>Student perspective of peer partnerships for learning  <i>Nirma Samarawickrema</i></p> <p>Digital literacy and self-efficacy in STEM education  <i>Hoon Siang Gn, Jack Wang, Gwendoline Lawrie</i></p> <p>Student perceptions of teamwork in undergraduate science degrees  <i>Laura Ann Wilson, Rowan Brookes, Susie Ho</i></p> <p>Ready for work: Helping undergraduates recognise the transferable skills developed during their degree  <i>Michelle Hill, Tina Overton, Rowan Brookes</i></p>	<p><b>Bites 6: Assessment (S4)</b>  <b>Chair: Manjula Sharma</b>          Applying learning analytics approaches at course/unit level to develop a targeted intervention  <i>Lesley Lluka, Mark Williams, Prasad Chunduri</i></p> <p>Evaluation of students' attitudes towards written and video feedback for laboratory reports  <i>Klaudia Budzyn, Barbara Kemp-Harper, Elizabeth Davis, Gerry Rayner</i></p> <p>Does (online versus traditional) assessment method impact on exam performance?  <i>Maria Parapilly, Mark Taylor</i></p> <p>A case for limiting written examinations  <i>Nicholas Tran, David Hoxley</i></p> <p>Assessing the assessments: What have we learned?  <i>Siegbert Schmid, Simon Pyke, Samuel Priest, Glennys O'Brien, Daniel Southam et al</i></p>
12.20-1.20	Lunch (GCF foyer)	
1.20-2.20	<p><b>Orals 7: Skills development (S3)</b>  <b>Chair: Elizabeth Davis</b>          Encouraging students' self-regulated learning skills through the use of discussion boards  <i>Richard Leung, Louise Ainscough, Kay Colthorpe, Tracey Langfield</i></p> <p>Developing teamwork skills in undergraduate science students: The academic perspective and practice  <i>Rowan Brookes</i></p> <p>Removing the cloak of invisibility: Developing</p>	<p><b>Orals 8: Maths and misconceptions (S4)</b>  <b>Chair: Deborah King</b>          Perceptions of mathematics among undergraduate biomedicine students  <i>Anthony Morphett</i></p> <p>Perspectives on equity in mathematics education at an Australian university  <i>Jim Pettigrew</i></p> <p>Getting fundamentals right: Case studies in how to confront students' misconceptions  <i>Heather Verkade, Terence Mulhem, Allen Espinoza,</i></p>

	scientific writing practices for commencing science students <i>Yvonne Davila, Neela Griffiths</i>	<i>Jason Lodge, Kristine Elliott, Simon Cropper, Benjamin Rubinstein</i>
2.25-2.55	<p><b>Bites 7: eTools (S3)</b> <b>Chair: David Hoxley</b> Monash Rocks: The first step in an augmented reality journey through deep time <i>Barbara Macfarlan, Marion Anderson, Julie Boyce</i></p> <p>Changing your mind on the internet: Can YouTube audience think critically? <i>Petr Lebedev, Manjula Sharma</i></p> <p>Using social media in a science communication course <i>Natalie Williamson, Heather Bray</i></p> <p>Online interactive textbook use in anatomy and physiology: Teaching an old dog (academic) new tricks <i>Glenn Harrison, Andrew Brodie</i></p> <p>Ausgeol.org: A new resource for earth science education <i>Michael Roach, Samantha Lake, Bronwyn Kimber, Shelley Greener, Stephen Harwin, Jennifer Ralph, Stephen Cooke, Phillip Sansom</i></p>	<p><b>Bites 8: Engagement (S4)</b> <b>Chair: Rowan Brookes</b> Do accelerated students in nursing benefit from face-to-face support when online support is available? <i>Sheila Doggrell, Sally Schaffer</i></p> <p>Understanding students' motivations and learning and how they change in a peer learning program <i>James Brady, Christine Devine, Hayley Moody, et al</i></p> <p>Student engagement, learning and perceptions in a flipped classroom <i>Kate Carroll, Sharon Flecknoe, Caitlin Filby, Amanda Davies, Kirsten Schliephake</i></p> <p>Pre-lecture videos and quizzes as effective tools to promote student engagement and achievement <i>Siegbert Schmid, Ayla Jones, Rena Bokosmaty, Adam Bridgeman, Meloni Muir</i></p> <p>Designing blended learning in STEM <i>Roslyn Gleadow, Barbara Macfarlan, Melissa Honeydew</i></p>
2.55-3.25	Tea/coffee (GCF foyer)	
3.25-4.25	<p><b>Orals 9: Engagement (S3)</b> <b>Chair: Jasmina Lazendic-Galloway</b> Motivating Greater student engagement in learning <i>Raoul Mulder, Theresa Jones</i></p> <p>Physical biochemistry: Embodying the amino acids <i>Terence Mulhern, Rinske Ginsberg</i></p> <p>Enhancing student engagement and conceptual understanding through active learning tutorials <i>Allen Espinosa, Heather Verkade, Terence Mulhem, Jason Lodge</i></p>	<p><b>Orals 10: The first year (S4)</b> <b>Chair: Glennys O'Brien</b> Explicit teaching of skills for first year biologists: Reflecting on our impact <i>Dawn Greeson, Lisa Godinho, Lynetter O'Neill</i></p> <p>Curriculum transformation: Creating alternative pathways in first year chemistry <i>Simon Bedford, Glennys O'Brien</i></p> <p>Patterns of study of the first year chemistry cohort <i>Suzanne Boniface, Amanda Gilbert</i></p>
4.30	<b>Closing remarks (S3) — Chris Thompson</b>	
7 for 7.30	Dinner at the Melbourne Aquarium, King Street & Flinders Street, Melbourne	

### Conference Venues:

S1-S4, Science Lecture Theatres, 16 Rainforest Walk

GCF, Green Chemical Futures, 13 Rainforest Walk

**POSTER 1**

An open access e-textbook to support students to become scientists

*Brianna Julien, Louise Lexis*

**POSTER 2**

Embedding employability into the final year of a non-vocational health sciences course

*Louise Lexis, Brianna Julien*

**POSTER 3**

Evaluation of an interactive e-book as an effective resource for student engagement and learning in anatomy.

*Alexandra Trollope, Maria Bellei, Torres Woolley and Ryan Harris*

**POSTER 4**

Evaluation of current teaching practices and approaches to teaching in the school of biomedical sciences at Monash University

*Alice Kim, C. Speed, Janet Macaulay*

**POSTER 5**

Do students and staff see assessment through the same eyes?

*Yvonne Hodgson and Loretta Garvey*

**POSTER 6**

Science inquiry in undergraduate physics laboratories: comparing student expectations and experiences

*Gabriel Ha Nguyen, John O'Byrne, Manjula Sharma*

**POSTER 7**

Using interactive simulations to enhance student engagement in mathematics and physics

*M. Wegener, E. Kenny, J. Ponce Campuzano, A. Roberts, K. Matthews, T. McIntyre*

**POSTER 8**

Assessment practices over a whole degree program: what do students see?

*Yvonne Hodgson and Loretta Garvey*

**POSTER 9**

Online lessons: An effective avenue for content delivery

*Wayne Sturrock and Amanda Davies*

**POSTER 10**

Efficacy of workbooks in foundation chemistry

*Siew Chong, Erica Smith*

**POSTER 11**

Teaching-interested science academics: Scholarly activity across a range of roles

*M. Wegener, M. Parappilly, J. Daicopoulos*

**POSTER 12**

Stem graduates as digital creators: Computational thinking for twenty-first century employability

*D. Southam, A. Rohl, T. Balser*

**POSTER 13**

Big data: Maximising the teaching and learning opportunities for higher education science students

*Simon Bedford, and Roza Dimeska*

**POSTER 14**

Extending and sustaining work integrated learning in science

*Liz Johnson, Malcolm Campbell, John Holdsworth, John Rice, Cristina Varsavsky, Jo Ward, Trina Jorre de St Jorre, Jo*

*Elliott, Jen Aughterson*

**POSTER 15**

Nursing students are more reliant on ongoing assessment scores to succeed in bioscience and pharmacology than paramedic students

*Sheila Doggrell, Sally Schaffer*

**POSTER 16**

Does attending bioscience lectures matter, when lecture recordings are readily available?

*Sheila Doggrell, Sally Schaffer*

**POSTER 17**

Statistical analysis of academic results in a first-year on-campus and on-line physics unit

*Purna Chandra Poudel, John Long*

**POSTER 18**

Partnership teaching in a first-year life-sciences physics unit

*John Long, Peter Huf, Ajay Mahato, Rupinder Sian*

**POSTER 19**

Combined 2nd year practicals – innovation and change within the system

*Michelle Coulson, James Botten and Christopher Wong*

**POSTER 20**

Making online pre-work achievable and worthwhile

*Sharon Flecknoe, Kate Carroll, Amanda Davies, Caitlin Filby and Kirsten Schliephake*

**POSTER 21**

Engineering technology: The missing stem subject

*Nicholas Tran, Anthony Carter, David Hoxley*

**POSTER 22**

“I’ve done this. Let me show you.” Developing student-designed resources for troublesome STEM concepts.

*Therese Wilson, Kristy Winter, Christine Devine, Richard Medland, Hayley Moody, Sharmila Gamlath, James Brady, Yulin Liu, Dulip Herath, Ian Lightbody, Laurence Fairbairn*

**POSTER 23**

An investigation into students’ strategies and pitfalls for solving electrophilic aromatic substitution mechanism questions

*Ryan Lopez, Dino Spagnoli, Tristan Clemons*

**POSTER 24**

A comparison of two software packages for use as electronic laboratory logbooks – Preliminary findings

*Alexandra Yeung, Diana Taylor*

**POSTER 25**

Understanding student initiated mobile-learning in higher education

*Sanjay Vasudeva, Hardy Ernst, Kay Colthorpe*

**POSTER 26**

Developing creativity through an innovative approach to laboratory reports

*Speed, C.J., Lucarelli, G, Macaulay, J.O.*

**POSTER 27**

Practising information skills in the context of the engineering classroom

*Fiona Jones, Nicholas Tse, Raymond A’Court, Carmi Cronje*

<b>Discipline day</b>			
<p>9.00-10.30 — <b>G60</b> Chasing the unicorn: A new approach to course design in chemistry to engage students and achieve threshold learning</p> <p><i>Shannan Maisey, Kim Lapere, Scott Sulaway, Steven Yannoulatos</i></p>	<p>9.00-11.00 — <b>G09</b> CUBEnet and VIBEnet (BEAN) workshops</p> <p><i>Tina Hinton, Fiona Bird</i></p>	<p>9.00-10.30 — <b>G15</b> Integrals, integers, integrity</p> <p><i>Deborah King, Katherine Seaton, Cristina Varsavsky</i></p>	<p>9.00-11.30 — <b>G18</b> AIP Physics Education Group Innovative teaching: Practice and spaces</p> <p><i>Jasmina Lazendic-Galloway, Maria Parappilly, Theo Hughes, John Daicopoulos</i></p>
<p>11.00-12.30 — <b>G60</b> Molypoly2: A new novel organic chemistry interactive modelling tool</p> <p><i>Susan Turland, Winyu Chinthammit</i></p>	<p>11.30-1.30 — <b>G09</b> Professionalism in biomedical science degrees</p> <p><i>Yvonne Hodgson, Julia Choate</i></p>	<p>11.00-12.30 — <b>G15</b> Issues in mathematics education</p> <p><i>Deborah King, Katherine Seaton, Cristina Varsavsky</i></p>	<p>11.30-1.00 — <b>G18</b> Networking for student success in STEM-dependent disciplines</p> <p><i>Therese Wilson, James Brady, Kristy Winter</i></p>

**Workshop venues:** G09, G15, G18, and G60, 9 Rainforest Walk.