# Conference Program

**Day 1**

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9.00-10.00</td>
<td>Registration (S1-S4 foyer)</td>
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<tr>
<td>10.00-10.15</td>
<td>Welcome from the Dean of Science, Professor Jordan Nash (S3)</td>
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</tbody>
</table>
| 10.15-11.00| **Keynote 1** (S3) — *Chair: Cristina Varsavsky*  
A road to success: Preparing students for an unknown career  
*Karen Burke da Silva* |
| 11.00-11.30| Tea/Coffee (GCF foyer)                                                                          |
| 11.30-12.30| **Orals 1:** Employability (S3)  
*Chair: Gwen Lawrie*  
Deviation from STEM Peers and Employers in Employability Focuses: The Case of Maths, Stats, Physics and Astronomy Students  
*Serene Lin-Stephens, Maurizio Manuguerra, James Downes, Judith Dawes, Carolyn Kennett, John Uesi*  
Graduate employability in science: Academics’ perceptions  
*Mahbub Sarkar, Tina Overton, Chris Thompson, Gerry Rayner*  
Beyond placements: Using curriculum mapping to embed WIL across a chemistry major  
*Erica Smith, Jackie Reed* |
| 12.30-1.30| Lunch (GCF foyer)                                                                               |
| 1.30-1.55| **Bites 1:** Thinking skills (S3)  
*Chair: Yvonne Hodgson*  
Evaluating the metacognitive skills of first year allied health students in anatomy  
*Angelier Sweep, Tracey Langfield, Kay Colthorpe, Louise Ainscough*  
Addressing gender disparity in the understanding of projectile motion  
*Umairia Malik, David Low, Kate Wilson*  
Do our students have a weight problem?  
*David Low, Kate Wilson*  
Transformations of records usage in higher education  
*Kei Wei Lam, Kay Colthorpe, Louise Ainscough*  
Pathways to creating inclusive learning environments through adaptation of |
| 1.30-1.55| **Bites 2:** Learning in the lab (S4)  
*Chair: Elizabeth Yuriev*  
Can spreadsheets be used to engage students with open investigations in school science?  
*Vidya Kota, Scott Cornish, Manjula Sharma*  
The ASELL Schools national project  
*Manjula Sharma, Scott Cornish, Alexandra Yeung, Scott Kable*  
Investigating students’ experiences of undergraduate science experiments across 5 disciplines: are student experiences really that different?  
*Scott Cornish, Alexandra Yeung, Scott Kable, Manjula Sharma*  
Supporting decision making in the lab  
*Angela Ziebell, Stephen George, Chris Thompson, Tina Overton* |
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<tr>
<th>Time</th>
<th>Session</th>
<th>Chair</th>
<th>Summary</th>
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| 2.00-3.00  | Orals 3: Employability (S3)            | Janet Macauley         | Building employability skills in a biomedical science capstone unit  
Daniel Czech, Maria Demaria, Yvonne Hodgson  
Developing undergraduate careers awareness and employability skills via an assessed professional development program  
Julia Choate, Sandy Cran, Maria Demaria  
Barriers and opportunities for engaging science students in WIL  
Jo Elliott, Trina de St Jorre, Liz Johnson | Orals 4: Thinking skills (S4)  
Daniel Southam  
A cross sectional study of performance on a pilot chemistry critical thinking test  
Stephen Danczak, Chris Thompson, Tina Overton  
Critical thinking: A STEM industry perspective  
Alastair Pearl, Ian Larson, Laurence Orlando, Gerry Rayner  
Cultivating creative thinking in science students  
Jasmina Lazendic-Galloway |
| 3.00-3.30  | Tea/coffee (GCF foyer)                 |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3.30-4.15  | Student panel (S3) — Chair: Chris Thompson |                        | The science student experience in 2017                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4.15-4.30  | Poster bites (S3) — Chair: Tina Overton |                        | Sally Schaffer, Sally Schaffer, John Long, Michelle Coulson, Sharon Flecknoe, Nicholas Tran, Kristy Winter, Ryan Lopez, Alexandra Yeung                                                                                                                                                                                                                                                                       |
| 4.30-6.30  | Posters, drinks, nibbles (GCF foyer)   |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Day 2      |                                       |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9.00-9.45  | Keynote 2 (S3) — Chair: Chris Thompson |                        | Teaching large classes without lectures  
Paul Francis                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9.45-10.15 | Bites 3: Identities (S3)               | Suzanne Boniface       | Transition into STEM study: Developing strategies to engage indigenous students  
David Collins, Lisa Godinho, Michelle Levitt, Lyn O’Neill, Mick Moylan, Syd Bordell  
Academic attitudes to service teaching  
D Clifton, S McKillup  
Who are we? The identity of STEM educators  
Rachel Sheffield, Susan Blackley, Dawn Bennett  
The impact of gender on the career plans of undergraduate chemistry students in Australia, New Zealand and the UK  
Jared Ogunde, Tina Overton, Chris Thompson | Bites 4: Supporting students (S4)  
Jim Pettigrew  
We built it, where are they?  
Don Shearman, Lyn Armstrong  
Development of an instrument to investigate affective factors impacting students’ mathematics success in an enabling program  
Jasmine Ng, Kung-Keat Teoh  
Supporting students with disabilities in our undergraduate classes  
Lisa Starkey  
Structure mathematics support with flexible learning modes: Who, what, why, where, when and how?  
Deborah Jackson  
Looking for innovative and efficient teaching methods for first year university mathematics  
Jelena Schmalz, Xenia Schmalz |
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|           |                                       |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |</p>
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<th>Time</th>
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<tr>
<td>10.15-10.45</td>
<td>Tea/coffee (GCF foyer)</td>
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| 10.45-11.15  | **Orals 5: Assessment (S3)**                  | Simon Bedford | Prompting undergraduate students’ metacognition of learning: Implementing meta-learning assessment tasks in the biomedical sciences  
Kay Colthorpe, Tania Sharifirad, Stephen Anderson, Kirsten Zimbardi  
Students created notes as an exam aid: A cross disciplinary content analysis  
Jo-Ann Larkins  
Open-note examinations as opportunities for meaningful learning and assessment  
Elizabeth Yuriev, Michelle Lazarus, Daniel Malone |
|              | **Orals 6: Lab learning (S4)**                | Siegbert Schmid | ‘You thought you did really well?’ Examining the relationship between self-evaluation, attributions and confidence in anatomy practical exams  
Julian Vitali, Louise Ainscough, Tracey Langfield, Kay Colthorpe  
Laboratory aims and expectations: Measuring the gap between students and teaching staff  
Stephen George, Tina Overton, Chris Thompson  
Redesigning the lab component of a bridging chemistry unit  
Catherine Rowen, Leonie Hughes, LanChi Koenigsberger |
| 11.50-11.55  | **Bites 5: Developing skills (S3)**           | Simon Pyke | Transitioning to the flipped classroom: Impacts on student satisfaction  
Laura Dooley, Sarah Frankland, Elise Boller, Elizabeth Tudor  
Student perspective of peer partnerships for learning  
Niruna Samarawickrema  
Digital literacy and self-efficacy in STEM education  
Hoon Siang Gn, Jack Wang, Gwendoline Lawrie  
Student perceptions of teamwork in undergraduate science degrees  
Laura Ann Wilson, Rowan Brookes, Susie Ho  
Ready for work: Helping undergraduates recognise the transferable skills developed during their degree  
Michelle Hill, Tina Overton, Rowan Brookes |
| 12.20-1.20   | Lunch (GCF foyer)                             |          |                                                                             |
| 1.20-2.20    | **Orals 7: Skills development (S3)**          | Elizabeth Davis | Encouraging students’ self-regulated learning skills through the use of discussion boards  
Richard Leung, Louise Ainscough, Kay Colthorpe, Tracey Langfield  
Developing teamwork skills in undergraduate science students: The academic perspective and practice  
Rowan Brookes  
Removing the cloak of invisibility: Developing  
Nicholas Tran, David Hoxley  
Assessing the assessments: What have we learned?  
Siegbert Schmid, Simon Pyke, Samuel Priest, Glennys O’Brien, Daniel Southam et al |
|              | **Orals 8: Maths and misconceptions (S4)**    | Deborah King | Perceptions of mathematics among undergraduate medicine students  
Anthony Morphett  
Perspectives on equity in mathematics education at an Australian university  
Jim Pettigrew  
Getting fundamentals right: Case studies in how to confront students’ misconceptions  
Heather Verkade, Terence Mulhem, Allen Espinoza, |
<table>
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<tr>
<th>Time</th>
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<th>Speaker Names</th>
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| 2.25-2.55 | **Bites 7: eTools (S3)** | **Chair: David Hoxley** | Monash Rocks: The first step in an augmented reality journey through deep time
Barbara Macfarlan, Marion Anderson, Julie Boyce

Changing your mind on the internet: Can YouTube audience think critically?
Petr Lebedev, Manjula Sharma

Using social media in a science communication course
Natalie Williamson, Heather Bray

Online interactive textbook use in anatomy and physiology: Teaching an old dog (academic) new tricks
Glenn Harrison, Andrew Brodie

Ausgeol.org: A new resource for earth science education
Michael Roach, Samantha Lake, Bronwyn Kimber, Shelley Greener, Stephen Harwin, Jennifer Ralph, Stephen Cooke, Phillip Sansom |
| 2.55-3.25 | **Tea/coffee (GCF foyer)** |           |                                                                                   |
| 3.25-4.25 | **Orals 9: Engagement (S3)** | **Chair: Jasmina Lazendic-Galloway** | Motivating Greater student engagement in learning
Raoul Mulder, Theresa Jones

Physical biochemistry: Embodying the amino acids
Terence Mulhern, Rinske Ginsberg

Enhancing student engagement and conceptual understanding through active learning tutorials
Allen Espinosa, Heather Verkade, Terence Mulhern, Jason Lodge |
| 4.30 | **Closing remarks (S3) — Chris Thompson** | |                                                                                   |
| 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 etextbook 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
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
### Discipline day

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<th>Time</th>
<th>Venue</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tr>
<td>9.00-10.30</td>
<td>G60</td>
<td>Chasing the unicorn: A new approach to course design in chemistry to engage students and achieve threshold learning</td>
<td>Shannan Maisey, Kim Lapere, Scott Sulaway, Steven Yannoulatos</td>
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<tr>
<td>9.00-11.00</td>
<td>G09</td>
<td>CUBEmet and ViBEmet (BEAN) workshops</td>
<td>Tina Hinton, Fiona Bird</td>
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<tr>
<td>9.00-10.30</td>
<td>G15</td>
<td>Integrals, integers, integrity</td>
<td>Deborah King, Katherine Seaton, Cristina Varsavsky</td>
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<tr>
<td>9.00-11.30</td>
<td>G18</td>
<td>AIP Physics Education Group</td>
<td>Innovative teaching: Practice and spaces</td>
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<tr>
<td>11.30-1.30</td>
<td>G09</td>
<td>Professionalism in biomedical science degrees</td>
<td>Yvonne Hodgson, Julia Choate</td>
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<tr>
<td>11.00-12.30</td>
<td>G15</td>
<td>Issues in mathematics education</td>
<td>Deborah King, Katherine Seaton, Cristina Varsavsky</td>
</tr>
<tr>
<td>11.30-1.00</td>
<td>G18</td>
<td>Networking for student success in STEM-dependent disciplines</td>
<td>Therese Wilson, James Brady, Kristy Winter</td>
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### Workshop venues:

- G09, G15, G18, and G60, 9 Rainforest Walk.