

# ACSME CONFERENCE 2018

Flinders University  
South Australia

Day 1 Wednesday 26 September 2018

8.30am - 9.00am	Registration	Physical Sciences - 0006, 0007, 0008 Anchor Court
9.00am - 9.05am	Housekeeping South Theatre 1	
9.05am - 9.15am	Opening South Theatre 1	Professor Colin Stirling Vice Chancellor, Flinders University
9.15am - 10.15am	Keynote Speaker South Theatre 1	Teaching Students to "Think Like a Physicist" ...and ending up with artists and scientists in a truly collaborative MakerSpace Dr John Debs, College of Science, Australian National University
10.15am - 10.45am	Morning Tea	Physical Sciences Rm 0006, Rm 0007 and courtyard
10.45am - 12.30pm	Parallel sessions	
	Session 1A: WIL  Rm: 0008	<b>Future of work: innovation skills as the missing link for employability</b> Giselle Camille Rampersad, Vlatka Zivotic-Kukuloj  <b>Preparing science students for the workplace through employer based projects</b> Dylan James Irvine, Karen Burke da Silva, Ingo Köper, Rebecca Phyland  <b>Investigating the longitudinal effect of large scale implementation of inquiry and industry based laboratories on students</b> Stephen Robert George-Williams, Angela Ziebell, Christopher Thompson, Tina Overton  <b>Using student self-reflection to improve learning outcomes and ensure work-ready biology graduates</b> Charlie Huveneers, Karen Burke Da Silva, Guido J Parra  <b>WIL-ing participants: Supporting science students' participation in work-integrated learning</b> Joanne Elliott, Trina Jorre de St Jorre, Elizabeth Johnson
	Session 1B: Assessment  Rm: South 1	<b>Reliability of grading using a rubric versus a traditional marking scheme in statistics</b> Anthony Morphett, Vasileios Giagos, Sharon Gunn, Jackie Reid  <b>Mastery Learning: Assessment for the Future?</b> Danica Solina, Mary Coupland and Greg Cave  <b>Designing curricula and assessments for quality learning in the school of earth and environmental sciences</b> Simon B. Bedford, Chris Brewer, Laurie Chisholm, Alexandru Codilean, Jenny A. Fisher, Zenobia Jacobs, and Dominique Tanner  <b>Development and validation of a chemistry critical thinking skills test</b> Stephen Danczak, Chris Thompson, Tina Overton  <b>Innovative Strategies for Engaging First-Year Engineering Students</b> Sherry Randhawa

	<p>Session 1C: Curriculum</p> <p>Rm: South 2</p>	<p><b>“They help you realise what you’re actually gaining”</b>: using static badges to enhance skill recognition and value amongst science undergraduates Michelle A Hill, Tina Overton, Rowan Brookes, Russell Kitson</p> <p><b>Innovation to improve learning outcomes: What are we missing?</b> Ian Paul Johnson</p> <p><b>Bunny Ears, Balloons or Flat Disks! Combining multimodal visual resources in blended learning environments</b> Paris Renzella, Kim Nichols, Gwendolyn Angela Lawrie</p> <p><b>Complexity in curriculum design: Surfing at the edge of chaos</b> Pauline Mary Ross, Philip Poronnik</p> <p><b>Future learning: Students creating a molecular virtual reality project</b> Philip Poronnik, Christopher Hammang, Weber Liu, Eric Jiang, Jim Cook, Pauline Ross</p>
12.30pm - 1.30pm	Lunch	Alere Function Centre the Hub
1.30pm - 3.10pm	<p>Parallel sessions</p> <p>Session 2A: Communication</p> <p>Rm: South 2</p>	<p><b>Harmonising the teaching of scientific communication skills through the development of an e-learning tool</b> Amber J. Willems-Jones, Joanne M. Russell, Jiang-Li Tana and Nicole Kountouria</p> <p><b>Student Perception of Science Communication Pre- and Post-Completion of a Communicating Science Course</b> Natalie Williamson, Heather Bray</p> <p><b>A project on communicating disease to non-scientists: do third year human pathophysiology students think this is an important task and what was the nature of the student experience?</b> Brianna L Julien, Brian Grills, Louise Lexis</p> <p><b>The Living Data Project: Collecting, Visualising and Communicating Science</b> Phillip Gough, Martin Brown, Emma Simpson, Tom Bartindale, Dan Jackson, Luke Gemming, Patrick Olivie, Pauline Ross, and Philip Poronnik</p>
	<p>Session 2B: Assessment</p> <p>Rm: South 1</p>	<p><b>Assessment of student reasoning through online synchronous concept chats</b> Gwendolyn Lawrie, Efraxi Kartsonaki, Renee Cole, James Li, Philip Waller, Carl Reidsema</p> <p><b>Assessing changes in conceptual understanding with the TCI</b> Umairia Malik and Elizabeth J. Angstmann</p> <p><b>Improving essay writing in large classes</b> Rebecca Hull, Alexander Zarebski, Robert Russo, Jen Martin, Robert Day</p> <p><b>Student and tutor perspectives of self, peer and tutor assessments for learning</b> Nirma Anandi Samarawickrema</p>
	<p>Session 2C: Curriculum</p> <p>Rm: 0008</p>	<p><b>Curriculum design to build capacity of industry professionals: a Masterclass in Horticulture 2860</b> Alistair Gracie, Tina Acuna, Claire Knowles, David Monckton, Dugald Close, Mark Boersma</p> <p><b>Lessons Learned from Challenged-Based approaches to teaching in 1st year Chemistry and Physics</b> Jamie Quinton, Ingo Köper</p> <p><b>Steam: is it all just a load of hot air?</b> Christopher D. Thompson and Jue T. Soo</p> <p><b>An effective in-curriculum model for undergraduate students’ development of transferable skills</b> Chris Thompson, Tina Overton</p>
3.10pm - 3.45pm	Afternoon tea	Physical Sciences Rm 0006, Rm 0007 and courtyard

3.45pm – 4.00pm	ACDS Announcement	The inaugural ACDS Learning & Teaching Fellowship Liz Johnson
4.00pm - 5.00pm	Poster bites	<ol style="list-style-type: none"> <li>1. Online tools adapted from industry for teaching agricultural science at university Tina Acuna, Beth Penrose, Oliver Roberts, Richard Rawnsley, Amy Cosby</li> <li>2. Disparate development of student understanding and execution of the conventions of scientific writing Judit Kibedi, Kay Colthorpe, Jia Dai Mi</li> <li>3. Student choice of assessment type to demonstrate research skills in plant science Amanda Able, Beth Loveys</li> <li>4. Staff and student perceptions of feedback within biomedical science teaching Scott Clarke, Jessica Gibbons</li> <li>5. Influences shaping biomedical science students' graduate destination Christian Panaretos, Kay Colthorpe, Judit Kibedi, Louise Ainscough, Tracey Langfield</li> <li>6. Modern Chemistry: challenge-based curriculum design Ingo Koeper, Joe Shapter</li> <li>7. Are science academics on the same page as society for a new future of work? Jo-Anne Chuck, Felicity Blackstock, Thomas Millar, Christopher Jones</li> <li>8. Investigating the effects of object-based learning activities- a pilot study in polymer chemistry Nada Yahia Majhali, Maria Parappilly, Justin Chalker</li> <li>9. Systematic review of the association between lecture attendance and academic outcomes for science students, and the effect of lecture recordings Sheila Doggrell</li> <li>10. Determining and developing student self-assessment capabilities Victor Hasa, Tracey Langfield, Louise Ainscough</li> <li>11. No association between attending lectures or accessing recordings and academic outcomes for medical laboratory science students Sheila Doggrell, Frances Breen, Sally Schaffer</li> <li>12. 'Let's not keep it private': schooling background and student preparedness transitioning into university Izaak Rutenberg, Louise Ainscough, Kay Colthorpe, Tracey Langfield, Judit Kibedi</li> <li>13. Gender Bias in NSW HSC Physics: Past, Present and Future V.J. Keast, T. Zentano, M. Gillham and M. Clancy</li> <li>14. Constructive alignment: Creating a quantitative approach to review science learning outcomes Elisa Kate Bone, Pauline Mary Ross</li> <li>15. Assessment design for a course/unit: data driven decision making vs. Academic views Lesley Lluka, Mark Williams, Prasad Chunduri</li> <li>16. Gender differences in first year undergraduate chemistry multiple choice question assessments Jacob Rhys Marchant, Natalie Williamson, Simon Pyke</li> <li>17. How do students deal with difficult physiological knowledge? Kay Colthorpe, Haruna Abe, Louise Ainscough</li> <li>18. Applying dispositional learning analytics to cluster learners by behaviours and performance Richard Leung, Louise Ainscough, Kay Colthorpe, Tracey Langfield</li> <li>19. The health science toolkit: a confident start to university Ranjna Kapoor, Pam Megaw, Glenn Harrison, David Simcock and, Kate Miller</li> </ol>

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**20. Jindaola, an aboriginal way: embedding knowledges and perspectives across the curriculum**

Tracey Kuit, Karen Fildes, Jade Kennedy

**21. Augmented Reality in Science Communication**

Michael Gladys

**22. Rolling Over 1st Year Physics Labs**

Michael J. Gladys, Colin Ho, Vicki Keast and Simon Utteridge

**23. Motivating 1st year students to do practice tests increases both practice test uptake and assessment grades**

Stuart Marlin, Anita Gray

**24. An inquiry-based learning module to foster critical thinking in a second-year biochemistry practical class**

Amber Jane Willems-Jones, Izabela Orval, Wenjing Hu

**25. Blended vs face-to-face comparison in delivering 1st year statistics**

Mitra Jazayeri, Shweta Verma, Volodymyr Vaskovych, Christeen Wijethunga, Premnadh M. Kurup and Xia Li

**26. Precursor or product: the blended learning environment in first year chemistry**

Jeffery Kirkland, Erica Smith

**27. The changing nature of mathematics support**

Lyn Armstrong, Donald Shearman

**28. Collective polymer lab learning: the UoN approach**

Clovia Holdsworth

**29. Structured media communication projects for students of the life sciences**

Christopher John Hammang, Scott Byrne, Geraldine O'Neill

**30. Investigating factors that influence STEM interest and attitudes**

Alexandra Yeung, Kimberley Phoon

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5.00pm – 7.00pm

Poster Session &  
Welcome Function

Welcome Function with drinks & finger foods

Alere Function Center

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8.30am - 9.00am	Registration	Physical Sciences - 0006, 0007, 0008 Anchor Court
9.00am - 10.30am	Concurrent Workshops	
	Workshop 1 Rm: South 1	Digitising chemistry teaching – workshop Magdalena Wajrak
	Workshop 2 Rm: 0008	TPACK: Unpacking how we approach online teaching Luke Hunter, Kim Lapere, Gwen Lawrie, Shannan Maisey, Reyne Pullen, Madeleine Schultz and Scott Sulway
	Workshop 3 Biology Discovery Centre	Tools for engagement: addressing the participation enigma in STEM Masha Smallhorn, Narelle Hunter and Jeanne Kirby Young
10.30am – 11.00am	Morning Tea	Physical Sciences Rm 0006, Rm 0007 and courtyard
11.00am – 12.30pm	Parallel session 3	
	Session 3A: Practicals  Rm: 0008	<p>Delivery of science practical classes in an intensive mode: staff and student perceptions Elaine Huber, Yvonne C. Davila, Alexandra C. G. Thomson, Peter C. Meier</p> <p>Embedding Inquiry-Based learning in practical laboratories using an assessment matrix Emma Thompson, Les Kirkup, Pauline Ross</p> <p>Feeling the heat: exploring emotional engagement of students with experiments Aesha Piyush Bhansali, Manjula Sharma</p> <p>A new model for assessing laboratory work Helen Johnston, Manjula Sharma</p>
	Session 3B: Creativity  Rm: South 1	<p>The performing sciences Ruth Aston, Terrence Damian Mulhern, Rinske Ginsberg, Sarah French</p> <p>How can we foster creativity in science education? Alice Minji Kim, Caroline Jane Speed, Janet Olwyn Macaulay</p> <p>Science through different cultures Angela Ziebell, Tyson Yunkaporta, Stephen George, Christopher Thompson, Tina Overton</p> <p>Developing deeper learning strategies to prepare STEM students for future careers Danica Mira Solina, Elaine Huber, Mary Coupland, Kate Crawford</p>
	Session 3C: Curriculum  Rm: South 2	<p>Riddles and Reflection: The Question Matters. Petr Maximovich Lebedev, Manjula Devi Sharma</p> <p>Supporting active learning through collaboration and problem solving in large subjects Hayley E. Bugeja, Alex Andrianopoulos, Kristine Elliott and Phillip Batterham</p> <p>Engaging students with multiple pathways for problem solving Elizabeth Yuriev, John Burton, Kimberly Vo, Sheryl Maher, Christopher Thompson, Martin Scanlon</p> <p>Three stories of science teaching and reflective practice – collaborating in teaching and learning scholarship Julia Savage</p>

12.30pm – 1.30pm	Lunch	Alere Function Centre the Hub
1.00pm – 1.30pm	Rm: 0008	Providing on-demand, 24/7 online tutoring support in the Sciences and Mathematics Presentation by Pearsons
1.30pm – 3.00pm	Parallel session 4	
	Session 4A: Maths Learning & Teaching  Rm: 0008	<p>First-year diagnostic mathematics tests Leanne Jill Rylands, Don Shearman</p> <p>An analysis to investigate students' deficiency in tertiary mathematics and statistics Gizem Intepe and Don Shearman</p> <p>Mathematics support – who needs it, why do they need it, and how should we deliver it? Deborah Cheryl Jackson</p> <p>Skills development in undergraduate mathematics Penny Vervoorst, Deb King</p>
	Session 4B: The Big Picture  Rm: South 1	<p>A new age of teaching: Teacher focussed, future focused Anthea Leigh Fudge</p> <p>Beyond 'the scientific method': what science in practice can teach students about the nature and process of science Robyn Yucel, Liz Johnson</p> <p>Enhancing academic engagement and delivery of innovative, high quality teaching in science courses through a grassroots learning and teaching community of practice Karina Riggs, Beth Loveys</p> <p>Revolutionising the first year in block mode Kathy Tangalakis, Samuel Howe</p>
	Session 4C: Student Perspectives  Rm: South 2	<p>Undergraduate science-based courses - Issues affecting student progression Jared Ogunde, Tina L. Overton and Christopher D. Thompson Partners in protein science: students as co-creators in curriculum content and assessment Christopher Anthony Love, Julie Crough</p> <p>Student perceptions of a contextualised intervention in nursing numeracy Jim Pettigrew, Annette Stunden, Susan McGlynn</p> <p>Experiences of Undergraduate Health Sciences Students in a Biochemistry Unit: A Basis for Context-based Instruction Katherine Fernandez, Tina Overton, Christopher Thompson, Nirma Samarawickrema</p>
3.00pm – 3.30pm	Afternoon tea Physical Sciences Rm 0006, Rm 0007 and courtyard	
3.30pm – 4.30pm	Closing Panel	Experiences from the classroom: Teaching Only, Teaching Focused, Teaching Specialist and Balanced teaching roles.
6.30pm 7:00pm	Pre Dinner Drinks Conference Dinner	National Wine Centre Adelaide Dinner speaker: Corey Bradshaw

Day 3 Friday 28 September 2018 – Discipline Day

7.45am - 8.30am      Travel

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9.00am – 12.30pm

Discipline Day  
Serafino  
McLaren Vale

**Workshop 1.**

BEAN - Creative engagement in the big new curriculum

**Workshop 2.**

Chemistry – Accreditation and Networking for Education Research

**Workshop 3.**

Mathematics – Providing mathematics support to all science students

**Workshop 4.**

Physics – Designing better student learning experiences in Physics

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12.30pm---1.00pm

Wrap-up

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1.00pm - 2.00pm

Lunch

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2.00pm - 3.00pm

Wine Tasting

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3.00pm

Departure

Return to Adelaide – Flinders University

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