ACSME 2024
Conference Program

DAY 1: Wednesday 18th September 2024	
8:00-8:40	**Registration** University of Canberra, Building 2, Level B
8:40-9:00	**Welcome to country: Wally Bell** **Introduction & Housekeeping: Adrian Dusting and Sara Rapson, ACSME Co-Chairs** **Opening address: Lisa Paul (Chancellor UC)** Location: 2B9
9:00-10:00	**Keynote 1: Sam Pazicni** Toward Cognitive Models of Chemistry Concepts (Sponsored by RACI) Chair: Stephen George-Williams Location: 2B9
10:00-10:30	**Morning Tea**
10:30-11:25	**Panel 1: Indigenous perspectives of belonging and the university experience** How can universities improve the experience of their Indigenous students? This panel will present three different perspectives of how to meaningfully support and embed culturally responsive practices within the learning, teaching and research experiences offered to students at undergraduate and postgraduate levels. Using case studies and examples, this panel will provide attendees with tangible, practical and effective ideas of what they can do in their own institution. Panellists: Peter Swanton, Angela Ziebell, Reuben Bolt Moderator: Merryn McKinnon Location: 2B9

	Parallel sessions			
	Embedding Indigenous Knowledges Chair: Susan Howitt (2B9)	**Motivation and Mindset** Chair: Sara Davies (2B2)	**Work Integrated Learning** Chair: Ingo Koeper (2B7)	**Student Engagement** Chair: Reva Ramiah (2B11)
11:30-11:45	Karen Burke da Silva, Kieren Beaumont *Totem talk.*	Laura Tubino, Kerri Morgan *Using preflection prompts in the transition to tertiary mathematics for identifying and addressing negative emotions. (online)*	Judit Kibedi *Stretching for relevance: Connecting the relevance of learning beyond the classroom.*	Reva Ramiah *Building Diversity, Belonging and Inclusion in STEM Higher Education.*
11:45-12:00	Karla Coutts, Joe Sambono, Angela Ziebell *Embedding Indigenous Australian histories and cultures in science curricula in higher education.*	Louise Faber *Sources of stress and effective coping strategies employed by first year exercise students.*	Agneetha Amarnath, Dipta Effendi *Work-integrated assessment: scaffolding employability skills for multi-disciplinary science cohorts.*	James Brown *Using LMS and assessment data to identify under-engaged students and predict performance.*
12:00-12:15	Karen Mate, Lizzie Manning, Saije Endacott, Sharleen Slater, Guy Cameron *A programmatic approach to Indigenisation of the curriculum.*	Kate Jackson, Thomas Dixon *A measure of motivation in an online astronomy course.*	Ingo Koeper, Jeanne Young Kirby, Narelle Hunter, Liu-Fei Tan *Embedded Career-building curriculum: lessons learned.*	Olivia Jessop*, Sarah Hampson, Liam Timms, Ava Greenwood *Enhancing online engagement: workshop redevelopment for students, by students.*
12:15-1:15	**Lunch**			

	Keynote 2: Louise Ainscough From Solitude to Solidarity: Nurturing Belonging Among Teaching-Focused Academics (Sponsored by LearnSci) Chair: Sara Rapson Location: 2B9			
1:15-2:10				
	Parallel sessions			
	Motivation and Mindset Chair: Sara Rapson (2B9)	**Empowering Educators** Chair: Sara Kyne (2B2)	**Empowering Educators** Chair: Elizabeth Angstmann (2B7)	**Modes of learning** Chair: Margaret Wegener (2B11)
2:15-2:30	Angus Linklater-Steele*, Kay Colthorpe, Louise Ainscough *Navigating the second year transition: exploring the mindsets of biomedical science students.*	Camile Moray, Neil Lawrence *Empowering professional staff in the third space: a case study on the Nexus Program at UNSW.*	Yessi Affriyenni*, Helen Georgiou, Christine Lindstrøm, Adam Micolich *What and how should I teach? A study on Physics lecturers' approaches to course design.*	Michael Kasumovic, Tim Dean, Pietro Pollo *Using a Game-Based Learning Approach to Help Students Understand the Importance of Ethics in Science.*
2:30-2:45	Jamil Glover*, Judit Kibedi, Louise Ainscough *Investigating how biomedical science students manage the emotional effects of feedback in autonomous learning environments.*	Sarah-Jane Gregory, Sarah Cresswell *A Guidebook for Scholarly Career Progression.*	Prue Laidlaw *A trellis of practices to support sustainable assessment redesign.*	John Debs, Ankur Singh *Comparing Virtual Reality to PC Simulations in Physics Education.*
2:45-3:00	Narelle Hunter *Enhancing engagement in academic integrity processes: addressing barriers for staff and students.*	James Cleaver*, Laura McKemmish, Sara Kyne *NLP and GenAI Analysis: Automating Thematic Analysis and Coding of Qualitative Educational Research Data.*	Adrian Dusting, John Rayner, Jim Woolnough *Conceptual complexity and its quantitative assessment within a physics service teaching environment.*	Margaret Wegener, Stefan Zeppetzauer, Timothy McIntyre, David Madden, John Debs, Tyler Neely, Sally Shrapnel, Jacinda Ginges, Jacquiline Romero *The realities of virtual reality for learning science.*
3:00-3:30	**Afternoon Tea**			

	Parallel sessions			
	Belonging Chair: Merryn McKinnon (2B9)	**Modes of Learning** Chair: Suresh Krishnasamy (2B2)	**Equity, Diversity and Inclusion** Chair: Thomas Dixon (2B7)	**Empowering Educators** Chair: John Debs (2B11)
3:30-3:45	Liu-Fei Tan, Jeanne Young, Ingo Koeper *How to keep your ducks in a row: making international students part of the family.*	Adrienne Burns, Manu Saunders *Building a novel online connected curriculum for Environmental Science.*	Joanne Castelli, Christina Chong *Assessment that nurtures cultural competence and reflective practice.*	Di Warren, Jacky Bell, Ken Ly *The maths advice bot: towards personalised, transitioning of students into first year science.*
3:45-4:00	Tracey Kuit *Have our first year science students changed since the pandemic?* (online)	Lisa Godinho, Rebecca Hull, Eirene Carajias, Gordon Yau, Abrar Hayat, Tim Blundell, David Withers, Alexis Pang *First-years outdoors with a little help from a Field Friend.*	Thomas Dixon, Kate Jackson *"Flex labs" in first-year physics promote inclusivity and equity.*	David Blair, Anastasia Lonshakova, Jesse Santoso, Tejinder Kaur, Kyla Adams Shachar Boublil, David Treagust, David Wood, Li Ju, Johanna Stalley, Susan Scott *Collapsing school physics enrollments: micro-credential courses for upskiling teachers in Einsteinian physics.*
4:00-4:15	Narelle Hunter *Supervised study: the power of peers in supporting student transition.*	Suresh Krishnasamy, John Gaughan, Shane Campbell, Angela Lees, Trish O'Hara, Melody Thomson *The Influence of A 6-Day Fieldtrip on Students' Perception of Sustainable Agriculture.*	Anthony Katselas, Cary Supalo, Jasodhara Bhattacharya, Prarthana Devia, Shane Wilkinson, Peter Rutledge, Alice Motion, Siegbert Schmid *Using Modern Technologies to Improve the Accessibility of the First-year Chemistry Laboratory.*	Anastasia Lonshakova, David Blair *Powers of the universe: a learning sequence and logarithmic book for teaching extreme numbers.*
4:30-6:30	**Posters (including 1 minute lightning talks)** Location: 2B9 then Building 2 Level B foyer			
5:00-6:30	**Social drinks -** *Sponsored by Source SBG – lab coat and other PPE provider*			

DAY 2: Thursday 19th September 2024				
8:30-9:00	**Registration** University of Canberra, Building 2, Level B			
9:00-9:45	**Keynote 3: Andrew Leigh** Chair: Adam Piggott Location: 2B9			
9:45-10:15	**Morning Tea**			
	Parallel sessions			
	Belonging Chair: Alex Yeung (2B9)	**Modes of Learning** Chair: Christopher Love (2B2)	**Modes of Learning** Chair: Chris Thompson (2B7)	**Assessment** Chair: Maurizo Costabile (2B11)
10:15-10:30	Joanne Castelli, Ifeoluwa MacKenzie, Stephanie Vialle, Tommy Woodward, Alexandra Yeung, Chen Zheng *Using SRES and other strategies to promote belonging and connection.*	Jinghan Fu*****, Kevin Fu*****, Diana Warren *Preferred delivery for lectures - what do students choose and why.*	Yuqing Fang*****, Stephen George-Williams, Shane Wilkinson *A modern Systematic Review of the use of pre-laboratory tasks in Science Education.*	Jack Mayhew, John Bertram, Reyhan Akhtar, Kim Catania, Frances Broomhead, Michelle Lazarus, Chantal Hoppe *Redefining Assessment: Implementing Large-Scale Viva Voce Exams in Anatomy Courses.*
10:30-10:45	Anna Phillips, Thanura Ediri, Timothy Atherton *"The vibe is better": an intersectional analysis of LGBTQ+ students' sense of belonging in first year physics.*	Christopher Love: *Enabling student success through reflection and study plan creation.*	Will Atkinson, Chris Hyland, Stephen George-Williams, Reyne Pullen *Advanced Organic Chemistry Laboratory Curricula in Australian Universities: Investigating the Major Topics and Approaches to Learning. (Online)*	Rashika Agarwal*****, Di Warren *Examining the exam: new metrics for improving the performance of multiple-choice questions.*
10:45-11:00	Gwendolyn Lawrie *Student Perceptions of Inclusive Practice in a Large, Blended Learning Chemistry Course.*	Alysha Caruso*****, Patricia Jackson, Sonia Horvat, Mick Moylan *Investigating the Study Habits that Lead to Success in First Year Chemistry.*	Shane Wilkinson *"Labtorials": Laboratory-focused tutorials.*	Linda Stals, Adam Piggott *MATLAB Grader Enhanced Assessment and Feedback.*
11:00-11:15	**Meander to 2B9**			
11:15-11:30	**ACDS Announcements** Location: 2B9			
11:30-12:30	**Keynote 4: Shannan Maisey** Navigating the Future of Science Education: The Role of Program Design in Student Success Chair: Adrian Dusting Location: 2B9			
12:30-2:00	**Lunch**			

	Parallel sessions			
	Belonging Chair: Manjula Sharma (2B9)	**Modes of Learning** Chair: Adam Kessler (2B2)	**Assessment** Chair: Jennifer Fox (2B7)	**Empowering Educators** Chair: Merryn McKinnon (2B11)
2:00-2:15	Lisa Godinho, Lindsie Arthur, Iain Walker, Rebekah Anderson *Demographic factors influencing perceptions of belonging in higher education STEM students.*	Adam Kessler, Anja Slim *Changing earth science students' perceptions of mathematics and programming through context-based education.*	Francesca van den Berg, Matthew Pye *Interactions with AI: can students critique and modify AI-generated output?*	Pierre Naeyaert, Reyne Pullen *Investigating Natural Language Models for Facilitating Peer Learning in Chemistry.*
2:15-2:30	Thomas Hiscox, Anna McLean Phillips, Kathryn Hodgins *Breaking barriers: the effects of social belonging and group identity on academic outcomes in the Australian STEM university sector.*	Amy Zhao, Sara Davies, Ava Greenwood, Timothy McIntyre *Attitudes to Programming in an interdisciplinary science course.*	Hong Dao Nguyen, Timothy Lee, Caitlyn Forster, Matthew Pye, Francesca van den Berg *Transforming scientific writing success for first-year biology students.*	Chantal Hoppe, Sonja McKeown, Reyhan Akhtar, Julia Young *Cultivating Research Skills in the Age of AI: Integrating Generative AI for Enhanced Learning and Assessment.*
2:30-2:45	Dilusha Munasinghe*, Angela Ziebell *Exploring the nexus between students' science belongingness and employability: a pilot.*	Corben Johnson, Alexandra Yeung *Generative AI in education: knowledge and attitudes of chemistry students.*	Jennifer Fox *Integrating reflection and annotation into a writing task for science students.*	Minh Huynh, Francesca van den Berg, Liana Pozza, Floris Van Ogtrop *How generative AI can enhance personalised feedback at scale.*
2:45-3:15	**Afternoon tea**			
	Parallel sessions			
	Belonging Chair: Mel Saligari (2B9)	**Modes of Learning** Chair: Sara Rapson (2B2)	**Assessment** Chair: Reyne Pullen (2B7)	**Equity, Diversity and Inclusion** Chair: Anna Phillips (2B11)
3:15-3:30	Pauline Ross *Challenging belongings for teaching and education focused academics in the higher education ecosystem in Australia.*	Wade Naylor *The multi-million-dollar inventory: the FCI uses and applications. (online)*	Sara Kyne, Grace Constable, Reyne Pullen *Assessment for learning examination guidelines: Final results from an ACDS Teaching and Learning Project 2022.*	Lauren Baade*, Gwen Lawrie, Effie Kartsonaki, Hassan Khosravi *Representational competency, visuospatial ability, and mental imagery: an exploratory study.*
3:30-3:45	Fu Ken Ly *The mathematics academic planner: raising awareness of assumed knowledge, promoting help-seeking, and supporting degree planning.*	Masha Smallhorn *Flipped classroom increases student engagement, satisfaction and success.*	Katrina Blazek *Improving assessment with transparency in learning and teaching.*	Thanura Ediri, Anna Phillips *Diversity of experiences: case studies of neurodiverse students in a first year physics sequence. (Online)*
3:45-4:00	Osu Lilje, Minh Huynh, Ella Collins-White and Shahnoosh Hayamanesh *Bridging first year barriers: fostering belonging in the biology learning space.*	Kevin Danastas *Enhancing student engagement and success through online interactive micro-lectures.*	Griffith Ware, Adam Piggott, Linda Stals *An assessment structure to foster success in tertiary mathematics.*	Mitchell Gibbs, James Gibbs, Pauline Ross *Indigenous knowledge: being and belonging in learning and assessment.*
4:05-4:50	**Panel 2: Student belonging and wellbeing** Panellists: Joanne Castelli (Curtin), Matt Thompson (ANU), Mikaela Dockrill (Manager of Student Wellbeing UC), Jaime Ratcliffe (UC student) and Alex Mozina (ANU student) Moderator: Susan Howitt Location: 2B9			
4:50-5:05	**Conference Close**			
6:30-9:30	**Conference Dinner** Australian War Memorial, Aircraft Hall			

DISCIPLINE DAY: Friday 20th September 2024			
8:30-9.00	**Registration**		
General Workshops			
9:00-10:30	Karla Coutts, Joe Sambono, Angela Ziebell *Workshop for embedding Indigenous Australian histories and cultures in science curricula* Location: 2B2		Elizabeth Angstmann, Chris Campbell, Chien Gooi *Shifting mindsets: moving towards a competency-based grading approach.* Location: 2B4
10:30-11:00	**Morning Tea**		
11:00-12:30	Brian Yates *Cultivating leadership in education* Location: 2B2		Rosanne Quinnell *Climate action in science curricula* Location: 2B4
12.30-1.30	**Lunch**		
Discipline-based Workshops			
1.30-3:00	Sara Kyne, Reyne Pullen, Dino Spagnoli, Jody, Moller, Alexandra Yeung, Erica Smith *RACI Chemistry Education Division Workshop* 2B2	John Debs, Elizabeth Angstmann, Anna Phillips *Modern, Higher-Year Physics Labs* 2B7	Adam Piggott *Belonging as an important step in tackling the mathematics problem* 2B11	Michelle Power, Lisa Godinho, Pauline Ross *Biology discipline workshop* 2B4
3.00-5:00	**Social gathering** *Optional at own cost*		

Each session will be co-chaired by UC representatives: Adrian Dusting, David Hartley, Grace Constable or Hilary Coleman.

Student Awards

All delegates are invited to nominate student presenters for student awards. Two awards will be presented for the Best Student Oral Presentations and two for the Best Student Posters. Student presentations are indicated with an asterisk.

Delegates may nominate up to three choices in each category using the forms below. It is suggested that delegates wait until they have seen multiple student talks before submitting their vote.

We kindly request you only submit one voting form and do not submit votes for students representing your home institution.

Posters

1. <u>Emma Richards</u>*, Kay Colthorpe, Louise Ainscough, Lisa Akison - *Developing professional identity of biomedical science students*

2. Prearena Lalwani, <u>Effie Kartsonakis</u> - *Exploring the impact of peer mentoring on student mentors' self-identity and sense of belonging at the University of Queensland*

3. <u>Ari Pinar</u>, Aidan Tang - *Time Matters: The Relationship Between Lecture Duration, Student Engagement, and Academic Performance*

4. <u>David Van Reyk</u>, Keith Heggart, Willa Huston - *Embedding social responsibility in undergraduate STEM Curricula*

5. <u>Dinara Fonseka</u>*, Nathan Habila, Ari Pinar - *Aligning students' self-reported learning approaches with observed engagement online*

6. <u>Maia Bradley</u>*, Judit Kibedi, Danielle Burgess - *Development of tutor self-efficacy in working with diverse learners*

7. <u>Dania Ibrahim</u>*, Ari Pinar, Nathan Habila - *Generating weekly engagement profiles using LMS-data to predict at-risk university students*

8. <u>Masha Smallhorn</u>, Narelle Hunter - *Using self and peer assessment to improve the groupwork experience*

9. <u>Michael Widjaja</u>, Osu Lilje - *Choose your own medium*

10. <u>Chantal Hoppe</u>, Julia Young, Reyhan Akhtar, Julia Choate, Kim Catania, Sonja McKeown - *Enhancing Student Engagement in Laboratories: Implementing Pass/Fail Lab Skill Competencies*

11. <u>Alexandra Williams</u>*, <u>Lauren Crean</u>, Susan Howitt - *Biology students' experience of practical work*

12. <u>Justin Carino</u>*, Thomas Hiscox, Lucy Richardson - *Are science graduates 'climate-ready'? Assessing undergraduate climate change education through student perceptions of empowerment, understanding and climate action.*

13. <u>Tiffany Gunning</u> - *Catalysts for change: educating for a just and sustainable world*

14. <u>Alan Payne</u> - *Changing the narrative: redesigning a biological chemistry undergraduate unit*

15. <u>Thomas Dixon</u>, Kate Jackson - *Following up on Scaffolded Physics Laboratory Skills: What Worked, What Didn't, What's Next?*

16. <u>Sarah-Jane Gregory</u>, Anna Balzer, Romeo Batacan, Sue Burgess, Roslyn Clapperton, Andrew Fenning, Maddie Higgins, Emma Hodge, Charmaine Ramlogan-Steel, Alannah van Waveren - *Towards bridging the gap between pre-medicine student artificial intelligence technologies capabilities and their future medical practices*

17. <u>Stefan Huth</u>, Susan van de Meene, Aisling McEvoy, Richard Hughes, Lauren May - *Connecting student attitudes and sustainability competencies in pharmaceutical science education*

18. <u>Lauren McKnight</u>*, James Cleaver, Laura McKemmish, Sara Kyne - *CHEM CLASS IN A GLASS: Informal science education meets sociocultural engagement*

19. Christopher Barnett, Thomas Maschmeyer, <u>Anthony Masters</u>, Alexander Yuen - *This is outrageous. I'm shocked. Shocked! Schrodinger's hypothetical demands his cat uses AI*

20.Tsz Wai Rosita Pang, Madeleine Schultz, Jillian Healy, Tricia Wevill, <u>Reyne Pullen</u>, Stephen George-Williams, Prarthana Devi - *Exploring the effects of Covid-19 on sessional academics in undergraduate science education: a qualitative study*

21. <u>Andrew Cutting</u>, Sarah Frankland, Eduardo Oliveira - *Enhanced data pathways for AI-driven learning analytics and personalised student feedback*