

# SBA2025 - Draft program

Wednesday, 19 November 2025	
8:00	Registration (Oceania Room)
Session I: Production of high value products - Sponsored by Bioplatforms Australia (Soundings theatre)	
9:00	Welcome to SBA 2025: SBA president Jason Whitfield and conference chair Mark Calcott
9:10	Plenary: Barrie Wilkinson (John Innes Centre): A platform for lantibiotic diversification
9:40	Darren Plett (Bioplatforms Australia)
9:55	Birgitta E. Ebert (U Queensland): Boosting Carbon Yield of Bioprocesses via Synthetic Chemolithoheterotrophy
10:10	Jessica Chiang (U Auckland): The potential of New Zealand fungi as generators of biomaterials to replace expanded polystyrene
10:25	Georg Fritz (UWA): Toward Engineered Living Materials in Seawater: A New Role for <i>Vibrio natriegens</i>
10:40	Morning Tea (Oceania Room)
Session II: Space, metabolism and molecular machines (Soundings theatre)	
11:20	Invited: Sarah A Kessans (U Canterbury): Bringing synthetic biology to new heights: platforms for biological research in microgravity
11:50	Simona Della Valle (UWA): Synthetic starvation: combining natural and engineered responses to nutrient limitation in <i>Vibrio natriegens</i>
12:05	Neil O. Robertson (UWA): Learning to walk: the first steps of an artificial protein motor
12:20	Paula de Dios Andrés (Aarhus U): Flippase-Mediated Division of Polymer-Lipid Hybrid Vesicles as Artificial Cell Scaffolds
12:35	Silvio S. Bonni (U Auckland): Engineering yeast to investigate the hidden role of 'Cheater'-suppression in the evolution of germ-soma specialization
12:50	Lunch break (Oceania Room)
Session III: High-throughput engineering and biosensors (Soundings theatre)	
13:50	Invited: Briardo Llorente (Macquarie U): Shuffling the Genomic Deck: Engineering Bacterial Genome Diversity
14:20	Invited: Kirill Alexandrov (QUT): Machine Learning Meets Cross-Eyed Protein Engineering: Building Artificial Protein Switches
14:50	Isabella N. Westensee (QUT): Protein Switch-Based Screening Platform for the Optimization of Lanmodulin selectivity
15:05	Jochem N.A. Vink (Malaghan Institute): Next-generation mRNA production drives RNA research and development advances in New Zealand
15:20	Afternoon Tea (Oceania Room)
Session IV: Engineering biosynthesis and biodiscovery (Soundings theatre)	
16:00	Invited: Emily Parker (VUW): Reconstructing biosynthetic pathways for complex fungal natural products
16:30	Rosannah Cameron (VUW): Synthetic biology tools for optimising the biosynthesis of natural products in filamentous fungi
16:45	Rory Little (VUW): Natural product biodiscovery from the bacterial symbionts of Aotearoa New Zealand endemic insects
17:00	Zeyu Lu (QUT): Engineering synthetic gene circuitry for efficient terpene biosynthesis in <i>S. cerevisiae</i>
17:15	Juan Pablo Molina Ortiz (CSIRO): Model Driven Engineering of Stable Auxotrophic Consortia
17:30	Poster session with nibbles and drinks (Oceania Room)
19:30	End of conference day

Thursday, 20 November 2025	
Session V: Plant synbio to advance the bioeconomy - Sponsored by the ARC Centre of Excellence in Plants for Space (Soundings theatre)	
9:00	Plenary: Jennifer A. N. Brophy (Stanford): Synthetic biology tools to enable engineering of environmentally resilient plants
9:30	Gabrielle Herring (UWA): Advancing synthetic gene circuitry in plants with novel split dCas12a-based tools
9:45	Vincent Nowak (CSIRO): Strain Engineering of Actinobacteria to Uncover Natural Products for Crop Protection
10:00	Florence Ly (UWA): Building synthetic gene circuits in moss for on-demand biomolecule production in space
10:15	Maxim Harding (U Queensland): Bacteriophage P22 virus-like particles as nanoscale protein scaffolds for plant synthetic biology
10:30	Morning Tea (Oceania Room)
Session VI: Public and social policy of synthetic biology (Soundings theatre)	
11:10	Invited: Juliet Gerrard (University of Auckland): Policy, politics, and emerging technologies – navigating through the maze
11:40	Invited: Aditi Mankad (CSIRO): Understanding Public Perceptions of Synthetic Biology in Australia: Psychological Insights for Guiding Innovation
12:10	Fran Humphries (CSIRO): Regulating Bio innovation to Advance the Bioeconomy
12:25	Revel Drummond (BSI): The New Zealand system of Gene technology regulation
12:40	Lunch break (Oceania Room)
Session VII: Metabolic engineering and synthetic biology tools (Soundings theatre)	
13:40	Invited: Anthony Poole (U Auckland): Could synthetic cells operate without DNA?
14:10	Claudia Vickers (QUT): Synthetic Biology and Metabolic Engineering for the Anthropocene: Identifying Meaningful Targets to Impact on Climate Change
14:25	Rezwan Siddiquee (U Sydney): seekRNA – A programmable, bi-specific RNA-guided system for large-scale DNA insertion
14:40	Haosheng Shen (SynCTI): Development of a <i>Lactobacillus</i> -Based Autonomous Nasal Drug Delivery Systems
14:55	Brady Owen (Scentian Bio): Engineering tetrameric insect odorant receptors for biosensor development
15:10	Afternoon Tea (Oceania Room)
Session VIII: Precision fermentation and diagnostics (Soundings theatre)	
15:50	Invited: Alexander Foster (BSI): Biotech Success Paradox: Why Failing Smart Matters More Than Failing Less
16:20	Elena Ereemeeva (QUT): Synthetic Nucleic Acids for Advanced Therapeutics and Precision Diagnostics
16:35	Daniel Bergen (U Queensland): Boosting Carbon Yields of Bioprocesses via Synthetic Chemolithoheterotrophy in <i>Pseudomonas putida</i>
16:50	David Hooks (BSI): Precision Fermentation and Synthetic Biology for Enabling Emerging Foods in Aotearoa New Zealand
17:05	Carol J. Hartley (CSIRO): Innovation in Precision Fermentation Production of Enzymes and Proteins for Food Applications
17:20	Networking and dinner event (To be confirmed)
19:20	End of conference day

Friday, 21 November 2025	
9:00	SBA Annual General Meeting
10:00	Morning Tea (Oceania Room)
Session IX: Synthetic biology tools and climate change (Soundings theatre)	
10:40	Invited: Gözde Demirer (Caltech): Synthetic biology to expand the plant genome engineering toolkit
11:10	Roy Walker (Macquarie U): Exploring the Biotechnological Potential of Refactored Killer Yeasts in the Age of Synthetic Biology
11:25	Taylor N. Szyszka (UWA): Engineering carbon-fixing protein cages for enhanced photosynthesis
11:40	Vaheesan Rajabal (Macquarie U): Uncovering the potential of integrons in synthetic biology applications
11:55	Henry Dixon (Western Sydney U): Climate Overshoot: Risk Ethics of Synthetic Biology for Climate Change Mitigation
12:10	Henrico Adrian (U of Technology Sydney): Accelerating the design and application of protein nanocages through cell-free protein synthesis
12:25	Lunch break (Oceania Room)
Session X: Advances in genetic circuitry and engineering biosynthesis - Sponsored by the Centre of Biodiscovery (Soundings theatre)	
13:25	Invited: Keith E. Shearwin (University of Adelaide): Rewiring bacteriophage circuits for programmable packaging and delivery
13:55	Invited: Yit-Heng Chooi (UWA): Beyond Nature: Harnessing NRPS Engineering and Enzyme Promiscuity for Novel Natural Products
14:10	Sacha Pidot: Breaking the Silence: Custom Promoter Design to Awaken Cryptic BGCs in <i>Nocardia</i>
14:25	Rose McLellan (VUW): Non-Canonical Type II Terpene Cyclases Deliver Rare Terpenoid Architectures
14:40	Anna Donnan (U Canterbury): iGEM in New Zealand: Unique Opportunities for Growing Synthetic Biology through Student-led Innovation
14:55	Afternoon Tea (Oceania Room)
Session XI: Computational tools and high-throughput screening (Soundings theatre)	
15:25	Helen Power (CSIRO): Integrating Conventional Methods with Artificial Intelligence for Accelerated Protein Function Discovery
15:40	Siyi Xue (U Melbourne): Yeast whole cell biosynthesis of nororipavine via N-demethylation
15:55	Tim McCubbin (U Queensland): A Metabolic-Model Driven Exploration of the Dynamic Shifts in Cyanobacterial Metabolism across a Batch Fermentation Process
16:10	Mariana Velasque (CSIRO): GEMOmics: A Fully Open Source Workflow for Omics Driven, Condition Specific Metabolic Modelling
16:25	Jessica James (U Oxford): Survival of the Brightest: Evolving Dynamic Phenotypes via Light-Based Microfluidic Selection
16:40	Award ceremony
16:55	Closing remarks
17:10	Group photo
17:25	End of conference