PLANT
SYNBIO
AUSTRALIA

News

NEWS FROM AUSTRALIA'S PLANT
SYNTHETIC BIOLOGY NETWORK

Plant SynBio Australia is funded through Bioplatforms Australia under the National Collaborative Research Infrastructure Strategy (NCRIS) and institutional partners

NCRIS National Research Infrastructure for Australia An Australian Government Initiative
BIOPLATFORMS AUSTRALIA
Adelaide University
Australian National University
LA TROBE UNIVERSITY
THE UNIVERSITY OF WESTERN AUSTRALIA

Government of South Australia
Department of Primary Industries and Regional Development

- Welcome -

Thank you for opening our latest Plant SynBio Australia (PSBA) newsletter.

Plant SynBio Australia is busily delivering expertise in genetic transformation and gene editing services to researchers investigating a variety of crops, from barley and wheat through to cowpea, tomato and lettuce.

Through the Bioplatforms Australia voucher projects awarded at the end of 2025, PSBA has enabled new and novel research that is expanding the horizon of crop science and adding value to research outcomes.

We are also setting up new transformation and gene editing services, including for tomato, lettuce, rice and other key species, that have potential as a crop chassis for the biomanufacturing of high-value specialised compounds. Establishing new transformation and gene editing capabilities is an important step in expanding the services available to Australian researchers.

"These new platforms will provide greater access to advanced plant synthetic biology tools, helping researchers accelerate discovery and unlock new opportunities in crop improvement and biomanufacturing." says PSBA-LTU Project Manager Daniel Isenegger.

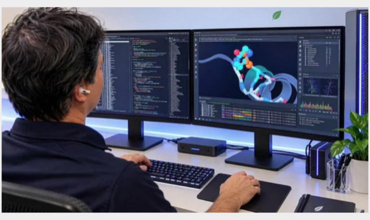
Plant SynBio Australia is keeping Australian research equipped, enabled and informed for this exciting revolution. If you would like to know more about our capabilities, or discuss how we could support your research projects, please don't hesitate to get in touch.

Warm regards,

The Plant SynBio Australia team

- Infrastructure & Services -

Advancing the Toolkit: New Technologies in Development



Plant Synbio Australia (PSBA) at Adelaide University is advancing a suite of innovative technologies designed to accelerate genome editing and plant transformation in key cereal crops. These developments address longstanding bottlenecks in applied wheat and barley research, through enhanced transformation and gene editing capabilities, and next-generation computational tools, and reflect our commitment to delivering high-performance platforms to the broader research community.

Read more here

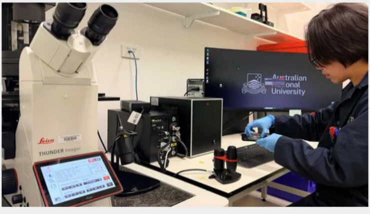
Integrating Stewardship throughout the entire research lifecycle

As genome editing tools become more powerful and collaborative projects multiply, the systems that track materials, record decisions, and demonstrate compliance become as critical as the laboratory protocols themselves. Plant Synbio Australia (PSBA) recognises this challenge and is developing a new digital infrastructure framework to support stewardship at scale.

Read more here

New capabilities being commissioned at PSBA-ANU

The Plant SynBio Australia node at The Australian National University (PSBA-ANU) continued to expand its capabilities with new technologies and expertise to support innovative plant biotechnology services and workflows. Our new BD FACSDiscover™ S8 Cell Sorter with CellView™ imaging technology will bring advanced cell sorting and imaging capabilities to the node, providing new opportunities to enhance and streamline our protoplast workflows. Read more here



- Collaboration & Partnerships -

Harnessing cloned resistance alleles for enhanced resistance outcomes in cereals

At the PSBA La Trobe University node, Dr Peter Dracatos is exploring the development of molecular breeding and advancing phenomics capabilities to efficiently screen and enhance disease resistance in cereals.

Included in this research program is a PhD project by Karishini Wijesinghe that is being supported by a top-up scholarship from the Grains Research and Development Corporation (GRDC Project ID ULA2511-002RSX), which aims to elucidate the functionality of novel disease resistance genes in barley. More broadly, it is hoped this research will help enable the development of durable disease resistances in barley, and eventually other cereals, using precision breeding strategies.

- Impact -

Gene Editing in Australia: When is a plant considered a GMO?

As plant synthetic biology specialists, we are often asked about current Australian legislation for GM technologies, so we have compiled some information to help stakeholders understand this regulatory space and to find the relevant information.

Advances in gene editing are providing plant scientists with tools for developing new crop traits, improving yields, supporting the development and production of novel plant vaccines and biopharmaceuticals, as well as improving plant tolerance of drought, disease and other environmental factors. Technologies such as CRISPR, base editing and prime editing are increasingly being used across agricultural and plant synthetic biology programs, but not all gene-edited organisms are treated the same under Australian regulations.

Understanding these distinctions is becoming increasingly important for researchers, breeders, technology developers and organisations planning contained research, field trials or commercial applications.

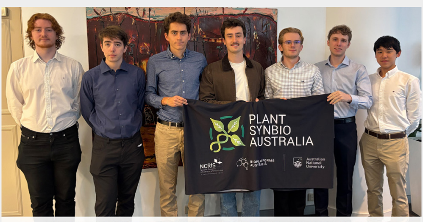
Read more here

PSBA supports Australasian SynBio Challenge success

Plant SynBio Australia (PSBA) is proud to celebrate the successful completion of its first student-led project through the Australasian SynBio Challenge, an exciting program that provides university students with an opportunity to tackle real-world problems using synthetic biology.

A team of six talented students from The Australian National University (ANU) took part in this year’s challenge and PSBA supported them with technical expertise, mentorship and access to infrastructure. PSBA-ANU research associate Hanjun Sun provided technical supervision.

Read more here



The ANU SynBio Challenge 2026 team (L to R): Byron French, Samuel McLeich, Toby Lang, Angus McKee (team lead), Conner Jacopino (external), Michael Vincent, Bartholomew Cheng.

- Human Capital -

Sofya Gvaramiya, PhD – La Trobe University node.

La Trobe's Dr Sofya Gvaramiya describes herself as a researcher who follows the plant wherever it leads, from field crops to terpenes. "My dad told me I had a 'magic touch' so often that I started to believe him," she recalls, "although my tomatoes at home would probably disagree."

"Whether or not the 'magic touch' is real, the curiosity it sparked was. It pulled me towards genetics, and from genetics towards synthetic biology, where the question shifts from why does this plant thrive? to what if I could help it thrive even more?"

Read more here

Learn how PSBA can help drive Biofuels development

Through advanced plant synthetic biology, plants can be repurposed from natural producers of biomass into precision manufacturing systems that convert carbon dioxide, sunlight, and simple nutrients into high-value products.
As a network of Australian synthetic biology experts, the Plant SynBio team is perfectly placed to enable innovations in plant function, converting these versatile biological platforms into sustainable biomanufacturing systems that align with net-zero and circular economy goals.

DOWNLOAD THE FACTSHEET

- Connect, Share and Subscribe -

To keep in touch with the latest developments, opportunities and outcomes across all four Plant SynBio Australia nodes, please join our LinkedIn community and subscribe to these regular news round-ups.

If you have a peer or colleague who might beinterested, please forward the newsletter to them with a brief note of introduction. We'd be delighted to welcome them to our world.

Contact us to discuss your research project and/or to visit our facilities:

- Adelaide University: psba@adelaide.edu.au
- Australian National University: psba@anu.edu.au
- La Trobe University: plantsynbio@latrobe.edu.au

Plant SynBio Australia is funded through **Bioplatforms Australia** under the **National Collaborative Research Infrastructure Strategy (NCRIS)** and supported by the South Australian and Western Australian State Governments, Plant SynBio Australia operates as a collaborative network across four university nodes: Australian National University, La Trobe University, University of Western Australia and Adelaide University.

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Our email address is psba@adelaide.edu.au

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